ADVANCE PRICES

WHEN the clock struck 12 midnight on December 31st last, did the curtain fall on the business operations of 1931, bringing to a "finis" the terrific liquidation of values and the disastrous depression in commerce and industry for that year?

It did not!

When the sun sank in the West on the last day of the calendar year of 1931, bringing to an end a twelve months' record of the most futile fight for "volume without profit" in the paper industry, did it also bring a termination of that senseless internecine warfare?

It did not!

The sun did not even shine on that drab, sad, disillusioning January 2nd, 1932.

When that day dawned and business operations for the new year began, it became immediately apparent that instead of a "finis" to all the 1931 depressive conditions, a cumulative hang-over of the old, destructive conditions was still with us and going strong. All of which goes to prove how much stronger are the fighting habits of people than all the sentiments and expressions of Happy New Year. And that brings us to the point we wish to discuss, which is, that it is going to take something far stronger than wishing happy sentiments to make 1932 a New Year, and prosperous!

Now, the one outstanding necessary accomplishment for 1932 is to bring back profit-making to paper-making. That alone, in our judgment, will make 1932 a New Year, and to that end, we propose to dedicate our time, ability and all the energy we possess. And in this dedication, we are not singular nor alone, for if we interpret the psychology of the industry aright, the same desire is well nigh unanimous.

However, the fact remains that up to this date, no action by anyone has been taken on which we can base any hope of profitable operations.

Here is the situation today as we see it:

The production of paper is practically profitless to all mills in all sections of the country because selling prices have sunk to a below-cost level.

As a result, banks, financial institutions, investors and security holders are threatened with an immediate and permanent loss of their investments. And a further sequential loss of far-reaching deadliness is in immediate prospect—viz., the alienation of any further investment of capital in the paper industry, thus making any new financing or necessary re-financing impossible.

The loss of the year's profit and dividends is one thing, bad enough in itself, but to imperil the safety of investment, and to alienate all future investors, and to bankrupt an essential industry is quite another—and worse. We have known a year in which we were compelled to forfeit profits, but in all the years, we have never until this time faced the deadly threefold menace of the loss of dividends and investments plus bankruptcy.

We lay down this indisputable postulate as the basis of all investment of capital—viz., safety first, and earnings.

Investors are not interested in the capture of huge tonnage volume at the loss of dividends.

Investors are not interested in campaigns for new markets at the expense of their investment.

Investors are not interested in trade warfare between various personalities in the industry, the continuance of which means the irreparable loss of all their properties.

Investors commit their money, in trust, to the various mill managements for two fundamental and primary purposes which are, the absolute safeguarding of the validity of their investments and the yearly returns to them of the hire of their capital.

Therefore, the failure to return earnings to investors and the present critical state of their investments is

chargeable primarily to management, for which failure and eventual loss investors will certainly hold management accountable.

Briefly, there is the situation which no man familiar with the industry's problems can gainsay. This was the situation at the threshold of 1932.

The year 1931, with all its mistakes and errors, has passed into history. We cannot change them, we cannot control them, but we do control the present and the future. The balance of 1932 is before us.

This is the day and the hour for remedial action. The question before the industry is—what can we do to bring back profit-making into paper-making?

Obviously, the only thing to do is to advance prices.

It can be done—it must be done—it will be done eventually—why not now?

The hordes of distressed investors in paper industry securities demand that it be done.

The multitude of persons who are dependent upon the paper industry for livelihood demand that it be done.

The Government, both state and federal, which looks to the industry for support and perpetuity, expects it to be done.

They rightly demand that profit be made on production instead of volume production without profit. Is that an unreasonable demand? It is the demand in the interest of "live and let live."

What industry needs is constructive leadership and it has within its fold corporations that can furnish that leadership. One fearless manager, say of the kraft paper division, could announce a substantial advance in selling prices and all other mills would follow. They would be compelled to follow. Their boards of directors, their banks, their stock and bond holders would compel them to follow, especially in view of the critical financial situation of all industry. Investors want no more alibis for the failures of 1931—they want immediate and indubitable assurances of profitable operations for 1932.

Unless such assurances in the shape of substantial advances in all paper prices to an above-cost level appear within the immediate future, wholesale receiverships and bankruptcy proceedings will be the order of the day. A blow of such magnitude to this noble industry must be averted at all costs.

No aid can be expected from the outside. Banks, financial institutions and investment houses have all they can do to save themselves. The industry must likewise save itself. The solution of its problem lies entirely within its control.

Make 1932 a New Year!

Bring back profit-making into paper-making!

Advance prices!

A New Dress—

WE ARE presenting with this issue a great and what is hoped to be an acceptable and pleasing change in the makeup and appearance of THE PAPER INDUSTRY.

In keeping with the modern trend in business paper typography, we have adopted a combination of type design and page arrangement which is believed to be forceful and attractive.

By the reduction of width of the columns of text matter, legibility has been greatly increased.

While these changes have been effected to improve the appearance of this magazine, there has been no change made in its policy. We will continue to strive to make this publication more and more helpful to paper and pulp manufacturers and to the production men in the mills, whose job it is to make better paper at lower production costs.

Just tell us how we can help. We are most anxious to serve you throughout 1932.

Save the Lumber Industry—and Others

LUMBER manufacturers and distributors are cooperating to reduce excess stocks and for other corrective measures in efforts to overcome present burdensome conditions in that industry. Under the auspices of a "Timber Conservation Board," appointed by President Hoover, an investigation has been undertaken with a view of determining the causes and effects of overproduction. The board will make an analysis of conditions in the forest products industries generally and recommend public and private measures for the re-establishment of profitable competition and, let us say, the suppression of cost conflicts. In addition, an effort will be made to bring about a reduction of the finance and tax burdens that have been influential in the past in forcing many timber firms to the wall.

The newly-formed Timber Conservation Board represents a curious development, being to some extent an expression of revolt against Government interference in business, seeing that the board is wholly supported by private funds contributed by various forest products industries, conservation interests and railroads, though certain governmental facilities have been made available to it, and the board is headed by Robert T. Lamont, Secretary of Commerce. This, and the fact that an advisory committee of the Timber Conservation Board lists in its membership many outstanding manufacturers, economists and foresters, are evidences of the great public interest in the problems to be studied by it.

The possibilities for improvement of the unfavorable

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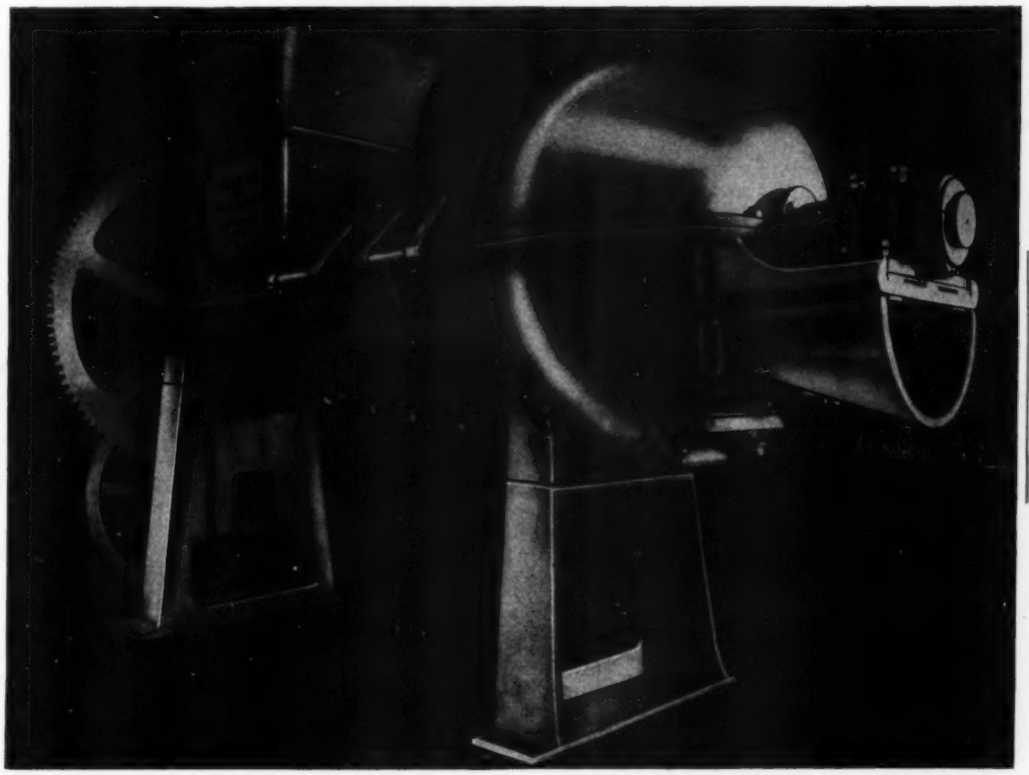

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economic conditions affecting all industries are regarded as distinctly encouraging and it is not surprising to learn that other forest products industries have petitioned the board to undertake investigations similar to those which have been planned for the lumber industry; indeed, the possibilities of relief for the paper industry as a whole, and for certain of its branches, are now under consideration.

Due to the abnormal pressure of the present economic crisis, industry is turning more to agencies that afford means for honest co-operation in an intensity and centralization of effort that few trade organizations have ever approached. This intensive co-operation is the type that interested manufacturers appear to be seeking through the Timber Conservation Board.

The Business Outlook

PRESIDENT GRAUSTEIN of the International Paper and Power Company, in a review of the year's activities contributed to the *New York Herald Tribune* for January 4, supplies an explanation of the difficulty experienced by the paper industry in operating at a profit under present conditions. After pointing out that the demand for paper has shown relative stability in comparison with the decline in consumption generally, he shows that the industry has failed to derive full benefit from its stable market because of a large excess of productive capacity. Production of paper and paperboard in the first ten months of 1931 decreased by about 10 per cent, while industrial production as a whole decreased by about 15 per cent.

The rapid increase in demand for all grades of paper during the past decade has led to an era of large-scale mill construction and this development is instanced in explanation of the inability of paper companies to make profits for their stockholders during the past few years. "Under normal conditions of demand, the burden of excess capacity would be supportable, but under present conditions, the load is too heavy and the factors of overcapacity, subnormal demand and low prices have combined to make it difficult for the paper industry to earn a fair return on invested capital."

Correction of excess capacity is under way, he believes, and through economic forces related chiefly to lower costs of operation in modern mills by means of improved machinery and supervision of production. So great have been the improvements in methods, machinery and processes that at today's level of prices many of the older mills are no longer competitive. The inference is that such mills have been turned to the manufacture of paper products in new demand other than newsprint. Mr. Graustein evidently had newsprint mills in mind in speaking of the great advantage which they have in cost savings over the older mills.

He is hopeful of an increased demand for paper following a return to normal general business conditions, an increase sufficient to absorb any threatened overcapacity, and is of opinion that paper manufacture will become more profitable with the greater return from increased production and stabilization of prices made possible when demand approximates more closely effective capacity.

Fighting Foreign Competition

THE Maine Development Commission is seeking for that State's producers of pulpwood and wood pulp, measures of relief from the destructive competition of foreign countries. By reason of lower wage scales and similar economic advantages, supplies of wood pulp are being exported to this country at prices below domestic costs of production. Facts and figures have been assembled by the lumber interests and pulp producers of the State of Maine to show the disadvantages to which they are subjected by the admission free of duty to this country of wood pulp and pulpwood of foreign origin.

Following a long decline, beginning early in 1930, pulp prices tumbled further in October 1931, to the extent that quotations now shade even the cost of domestic manufacture on the Pacific Coast, which is admittedly low. The very existence of the pulp industry in the Northeastern section is now in jeopardy, manufacturers of wood pulp in the State of Maine having been forced to curtail sales rather than attempt to meet the destructive competition with which they are confronted. The same is true of lumber and pulpwood sales which have been considerably curtailed in the face of competition from Canadian producers with an oversupply. Maine producers now quote at a reduction of $3 a cord; some weak operators, in despair of being able to cope with Canadian competition, even shading present low quotations.

Conditions have been aggravated since Sweden went off the gold standard, the devalorization of the krona having affected a decrease in the wage cost of production in that country to the extent of about 22 per cent in terms of dollars.

◆ BUSINESS is a game, and we are all in it. It requires a terrific unending energy to succeed. But the men who do big things are those who occasionally get away from the mass and find rest and recreation where the winds blow and the soothing waters flow; where the odor of the pines is perpetual, and where Nature supplies everything in the way of health and healing that tired bodies demand.—Elbert Hubbard.

ADVERTISING

THE PAPER INDUSTRY

A MONTHLY EDUCATIONAL JOURNAL

Specialties Sold Aggressively Make Profit Despite Low Volume

Nekoosa - Edwards place maximum emphasis on quality to help distributors maintain prices and ethical standards in face of volume battle.

By A. R. JACKSON, Sales Manager
Nekoosa-Edwards Paper Company

THERE has been much talk and much ado in the paper industry concerning conditions which have made impossible the conduct of business at a profit. There has been much watching of the other fellow, much complaining of unfair selling tactics and lack of respect for established trade customs and ethics. There have been many meetings called, committees appointed, better methods discussed and reliefs looked forward to. Yet, despite all this, few mills have been able to operate on a basis conducive of profits for the stockholders and steady wages for the employees.

Many reasons are advanced for these unfortunate conditions. Old Man Depression comes in for the bulk of the blame, and perhaps he deserves a large share of it. But to anyone looking at the picture calmly and sanely and observing the sales practices and tactics now widely employed in our industry, it must be evident that while Mr. Depression may be an important factor, he has a strong and powerful ally in the form of a venomous microbe, born and nurtured right here in our own industry.

I can think of no better term for this destroying evil than "volumania"—the obsession of mill men and distributors alike that volume is the one and only real and available route to better business.

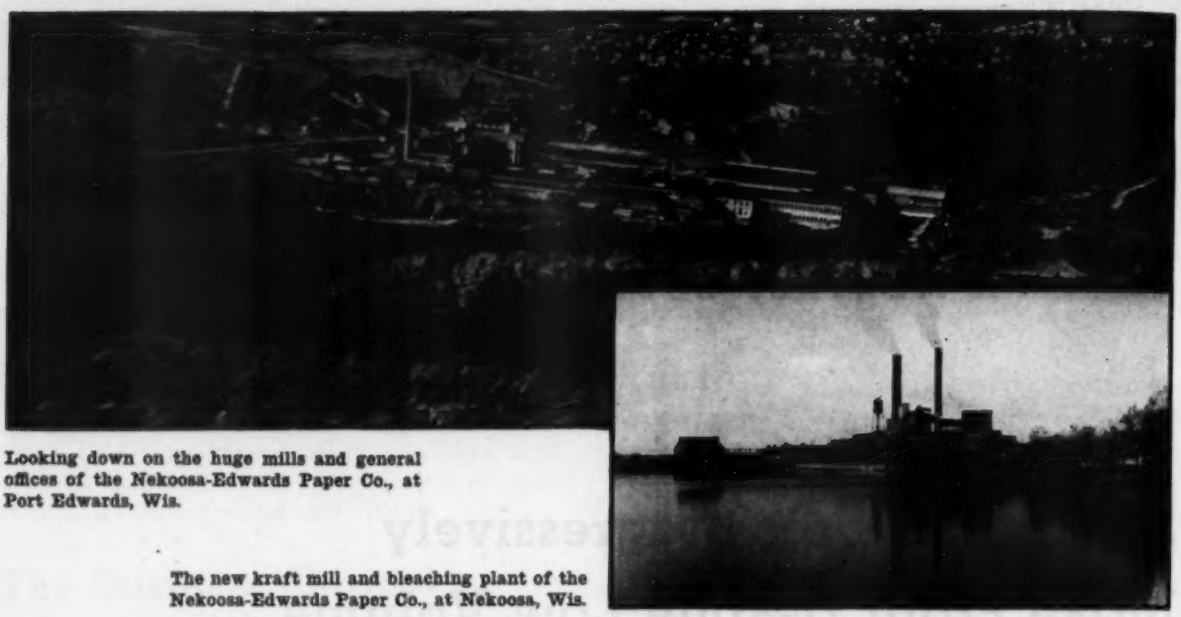
On all sides, the fallacy of this theory is glaringly evident. Everywhere in the paper industry there is demoralization, destruction and bankruptcy. Chaos reigns supreme, and formerly sound-minded, cool-headed sales executives, having fallen victim to the volume microbe, are engaged in a willful, wasteful warfare for business, in which their sole weapon is price and their one battle cry—"get the business."

Naturally such a battle is devastating to all contenders. And should it continue there can be but one end—the destruction of the resources of those who participate. For when there is no bottom to price cutting, there can be no stopping until the final contenders are compelled to cease because of sheer annihilation of resources. This, it seems to us, should be self-evident. Likewise it should easily be seen that when the present practice of yielding concessions in the matter of skids, cutting, etc., becomes general in the scramble to make sales, it is only a step to that point where sales are losses; and when that occurs the sheriff is not far away.

Specialization the Key

It is said there is a remedy for every ill: and we of the Nekoosa-Edwards Paper Company believe there is a readily available remedy for this great ill. It has been our contention right along that present tactics were ruinous to the entire industry. We have frequently voiced our warning that there was nothing to be gained in a policy of volume without profit. We don't propose to set ourselves up as oracles, but conditions as they are today reflect unmistakably that no one has gained, while many have suffered severely in the conflict for volume which is being waged.

The best remedy, of course, would be for every concern and individual in the paper industry to pledge adherence to ethical sales practices and to perfom 100 per cent on these practices. But since that seems today to be a Utopian hope, then in our opinion the only alternative for the honest mill and its honest distributors is to stay out of the price fight and the volume



Looking down on the huge mills and general offices of the Nekoosa-Edwards Paper Co., at Port Edwards, Wis.

The new kraft mill and bleaching plant of the Nekoosa-Edwards Paper Co., at Nekoosa, Wis.

scramble through the expedient of specialization, the maintenance of quality and the demand of fair price and reasonable profit.

Through all this tremendous scramble, the Nekoosa-Edwards Paper Company has been able to operate on a fairly satisfactory basis, all things considered. It has been able to acquire satisfactory volume, to get fair prices and to keep its distributors happy and contented. The answer is: specialization. We have departed from the customary channels and the obvious, foot-worn paths, and hewed out new avenues of business through the creation of new products. We have marketed these products with comparative ease because of their very difference. We have brought out improvements and seen those improvements adopted because they were distinctive and new. They were superior, they did something better, they assumed a new niche or rendered an old service in a new and better way. And so they had no competition to speak of, and they were not beset with the trials and tribulations of price-cutting and questionable selling tactics.

Because of this policy we have been able to practice what we have long preached: the curtailment of production in line with maximum demand. We have been able to respect every recognized trade custom and practice, and we have had the pleasure of making it possible for our distributors to do likewise. Part of this has been due to an elaborate program of research and experimentation which has taught us how to turn out certain papers from stock never before used for the same purpose, and to do this with a resultant far better quality without any increase in cost.

Better papers, newer papers, different papers . . . papers with new distinctions and new characteristics—these have been our aims, because we realized that through these mediums we could escape the terrific competitive struggle and carry on with comparative regularity despite the hectic general conditions. The plan has worked beautifully because it has isolated us, so to speak, from the volume-mad, fighting crowd. It has caused us to stand out apart from the others, to be more conspicuous, more apparent through the distinctions of our products and the clarity and uniformity of our policies.

Laying the huge, 3-mile pipe line to carry the pure water of Lake Nepco to the Nekoosa mill.

Here is a view of beautiful Lake Nepco, formed and owned by the Nekoosa-Edwards Paper Co. Observe the abundance of trees, part of the Nepco reforestation program.

We have, of course, maintained a consistent program of sales effort in the staple fields, too. After all, the manufacture of kraft is one of our primary purposes, and we have continued to pursue a regular program of sales effort in this division of our business. But what I am endeavoring to convey in this article is the fact that we have made staples an incidental of our every day work, and concentrated our main attention on the production and sale of specialized products not involved in the competitive quarrel.

For example, we have been able to give our distributors an incomparable line of specially designed printed papers. To do this has called for a large expenditure of time and money, but has enabled us to now produce special printed operations on the machines. Here again we are doing something different . . . we are spectacularizing our product . . . we are giving it a distinction that gets attention, and sells.

Pure Water for Quality Paper

Another example of our determination to leave no stone unturned that may influence the quality of our products may be observed in the new water pipe line we lately completed between Lake Nepco and our mill at Nekoosa. Our purpose here was to supply Nekoosa with pure, clear water in abundance in order to make possible a better quality of paper. To accomplish this we proceeded, at great cost, to lay a large capacity pipe line, three miles in length, to carry the crystal waters of the lake into our Nekoosa mill. As a result, this mill is now positioned to do bigger, better things than before in turning out high quality papers.

Lake Nepco itself reflects our "better quality" complex. We formed it. We own it. To us alone belongs the privilege of using its sparkling waters in the manufacture of papers. Within its fourteen miles of shore line and its three-quarter mile width is contained a volume of 2,300 millions of gallons of the finest water any paper maker could desire. It is ours to draw upon; and its availability is a large influence on the fine quality so characteristic of Nepco papers.

Wood Controlled in Cultivated Forests

Still another feature of our program of specialized quality may be found in the huge Nepco forests. We own and have under cultivation some 90,000 acres, where we annually plant more than 600,000 trees. In this way we are enabled to exercise complete control. Thus we know our logs are perfect. We grow them that. And we maintain this tremendous department simply and only because to do so positions us to protect and certify the quality of our products and to manufacture specialties of a distinctive and superlative nature.

I mention these Nepco features because they reflect the indomitable spirit of this great organization and also because they constitute our solution of the problems which today beset the entire industry. We don't offer these as a panacea for the ills of our industry, but to us they have the means by which we have been able to sail a comparatively untroubled sea, so to speak, while the industry as a whole has been confronted with turbulence and conflict.

Profit Is the Objective

In concluding let me say that I have every confidence that the industry will soon stage a come-back to sane conditions. I think most everyone is sick and tired of the business-without-profit policy and that the wisdom of respecting and adhering to established trade customs and ethics has become evident to everyone who has anything at all to do with the manufacture and distribution of paper.

So I feel that the seething struggle for volume will soon begin to subside and that confidence, co-operation and constructive merchandising will soon again be the rule rather than the exception. This change *must* come. No industry can survive the dog-eat-dog tactics under which paper is being distributed today. Destruction never pays dividends to anybody, and the mill that wants to make money will have to cut loose from the tonnage scramble, become profit-minded and get down to hard work along sound, sensible lines.

I think the story of our troubles and the answer to our problems is told by a writer in an entirely different line of business, who, writing in a recent issue of Sales Management Magazine, said: "There is no doubt that the greater part of our business demoralization is due to the forcing of distribution on a basis of money-losing prices. And I am convinced that the best policy for every manufacturer in this country at this time is to courageously and unflinchingly demand of his distributors that they do their part in getting goods from the factory to the consumer at a profit with a living profit to himself as well." And the mills of our industry might well do likewise.

CURRENT THOUGHT

BY WILLIAM SIBLEY

BOOKS

IN EIGHT January issues of THE PAPER INDUSTRY I have devoted the space of Current Thought to a discussion of the economic expectations of the ensuing year. It seemed the natural and needed thing to do. This January, I am going to leave such discussions to better minds than mine and talk about that thing which, in my opinion, is one of the greatest achievements of this modern, machine age—books.

The combined efforts of science and engineering have brought us far during the past century. They have made it possible for us to instantly flood a room with light merely by pressing a finger against a button. They have given us radio and a thousand and one other equally spectacular developments which make this the wonder age of all history. But quietly and without obtrusive fuss, the papermakers and publishers have developed their business to the point where all may have books—the convoys of expressed thought.

Literature, to me, is not only the most valuable but the most satisfying of all the arts. In painting, sculpture or ceramics, one must be an educated student to appreciate the genius of the creator. The artistry of music depends entirely upon the ability of the player to interpret the original meaning of the composer. Only those who have seen and felt, by long study or actual experience, the fine points of dramatic art, can fully appreciate the artistry of a good performer. But through books—through the medium of imperishable ink—the reader, whoever he may be, has access to the original thoughts of the writer at the time he wrote them. Experience in writing or composition is entirely unnecessary to the appreciation of expressed thought. The school boy appreciates the lucidity of Porter's *Scottish Chiefs,* the baby the magic of Stevenson's verse, as completely as the scholar enjoys the letters and treatises of Pliny. Through the mass production of books, this nation may boast of the highest level of literacy of any nation at any time, and if that is not an achievement of first importance—much of the credit for which must go to the paper industry—then all our standards of measurement are topsy-turvy.

Through books, all of us may hear, over and over again, the rumblings of Bacon, the screeching of Nietzsche, the hysteria of Schopenhauer, the soft tinkle of Longfellow, the melody of Gray, or the vibrant chords of Hubbard. Through books—their kind or lack of them—we find the key to our friend's character. Through the use and enjoyment of books we know whether or not to buy the son or daughter an expensive university training. Through books, we discover the reason for the degree of moral if not commercial success attained by nearly any one. Through books, we can direct and control not only our personal enjoyment, but our mental equipment and the progress it permits.

It is true, of course, that many successful men have been non-readers. It is said that Lincoln cared little for books except during his youth. Washington loved books as objects and became a famous book collector, but read comparatively few of the volumes. Al Smith is quoted as saying "I never read books; I never have read books"—which is evidence in itself that he has missed much beside the Presidency.

By far the greater number of our famous names, however, were omnivorous readers. Macaulay committed to memory *Paradise Lost.* While voyaging to India, which in those days was a long trip, Macaulay read insatiably the *Iliad, Odyssey, Virgil, Horace, Caesar's Commentaries,* Bacon's *DeAugmentis, Dante, Petrarch, Ariosto, Tasso, Don Quixote, Gibbon's Rome,* Mill's *India,* all the seventy volumes of Voltaire, Sismondi's *History of France,* and the seven large volumes of *Biographia Britannia.* And where is the man who does not feel certain that Macaulay's name will live longer in the annals of history than that of Alfred Smith.

Too often I hear people complaining about the lack of time to read; coupling that complaint with the regret that it is impossible to "keep up" with all the "new books." For any one who loves books, the hours are, of course, all too short. There is never enough time to read for the one who loves reading. But when a person says that he doesn't read because it is impossible to keep up with the flood-tide of new books—then I know that that person is merely trying to insulate his conscience against the realization that he should read—but doesn't. For, who would be so silly as to want to read all the new books? The larger the flood tide of books, the more difficult to find the ones which will stand the test of time. And until a book has proved its durability, nine chances to one it isn't worth reading.

Among the more recent books there are many which will last for years; and in the lasting, grow in prominence as an addition to literature. I refer more particularly to such historical works as the recent Bowers books: *Jefferson and Hamilton,* or *The Tragic Era.* Another book that will one day be considered a classic is Benet's *John Brown's Body*—by all odds the outstanding literary contribution of the last three years.

But for the one who wants to vastly enrich his intel-

lectual properties there is little but skim milk in modern books; nothing but cream in the old classics. For masterful English, beauty of expression, clarity of thought, illumination of ideas, and assured satisfaction in composition, the modern books comprise merely the overlay to be thrown aside for the gems and jewels that have crystallized and been preserved in the mine of letters.

Now that we have started a New Year, why not resolve that before 1932 has done we will improve our mental equipment by the reading of books? In books we cannot only find the most delightful of entertainment and a sounder outlook on present-day letters, but a source of profit as well. Naturally, it is impossible for any one individual to recommend the books another individual should read—without that one having a full understanding of the other's likes, dislikes and characteristics. One can only state what *he* likes or enjoys; hoping, the while, that his auditor will enjoy the same thing.

Largely because I like to read, but partly because I could not finish the second year of high school, I have read rather widely. And if you could like what I do, I would certainly recommend that you not only make the acquaintance but gain the true friendship of the *Three Musketeers, Don Quixote, David Copperfield, Ivanhoe,* the *Vicar of Wakefield,* the *Lady of the Lake,* not to speak of Shakespeare's incomparable characters.

And by no means should you forget that Victor Hugo is the master key who permits you to enter and explore realms untrod by any other litterateur. Once you learn the French genius, you lay aside the superficial belief in his verbosity and marvel at his brevity. Not only does he give you a deeper appreciation of French history in his *Les Miserables,* and his *"93",* but the depth of his thought as revealed in his *Last Days of a Condemned Man,* in Gilliate, the principal *Toiler of the Sea,* and in the four contrasting characters of his *Hunchback of Notre Dame* is something not frequently found in any library.

Regardless of who you are, where you live or what you do, the *Bible* of course is first. Then, there is keen delight in the poetry, comedy and romance included in Gray's *Elegy in a Country Churchyard,* Goldsmith's *Deserted Village* and *She Stoops to Conquer,* Sheridan's *Rivals* and *School for Scandal,* Burns' *Tam O'Shanter,* Scott's *Lay of the Last Minstrel,* Moore's *Irish Melodies,* Shelley's *Ode to a Skylark,* Lamb's *Farewell to Tobacco.* Then, too, DeQuincey's *Confessions of an Opium Eater,* or his *Flight of a Tartar Tribe,* which is said to be the one complete narrative from which no word can be omitted nor one added. Or these: Thackeray's *Vanity Fair,* Dickens' *Pickwick Papers,* and Bulwer's *Last Days of Pompeii.* For history, read: Prescotts' *Ferdinand and Isabella,* or his *Conquest of Peru,* Motley's *Rise and Fall of the Dutch Republic,* Mill's *India,* Guizot's *History of Civilization,* Draper's *History of the Intellectual Development of Europe,* and Hugo's *"93".*

For travel, there is a wealth of interest to be found in Parè's *Journeys in Diverse Places,* Drake's famous *Voyage Around the World* and his *Great Armada,* Raleigh's *Discovery of Guiana,* Goldsmith's *The Traveller,* Dana's *Two Years Before The Mast,* and Emerson's *English Traits.*

For modern philosophy, there is vast improvement for any mind in such works as Holmes' *Chambered Nautilus,* Lanier's *How Love Looked for Hell,* Whitman's *One's-Self I Sing,* Stevenson's *Celestial Surgeon,* Tennyson's *The Higher Pantheism,* Emerson's *Essays,* Thackeray's *The End of the Play,* Bryant's *Thanatopsis,* Pope's *Essay on Man,* Lessing's *Education of the Human Race,* and Hume's *Enquiry Concerning Human Understanding.* While in the subject of education, there is Ruskin's *Sesame and Lillies.*

No one should be without an understanding of the great American historical documents which, in themselves, have done more than anything else perhaps to mold or remold governmental structure in more than half the powerful nations of the world. Before reminding you of these American documents, however, let me suggest that from the point of view that history is past politics, such works as *Plutarch's Lives* and the "letters" of Cicero and Pliny, are of real value in the reading of history or politics. Many of the problems of politics change their form rather than their essence with the passing years, so that in these records of the political struggles of antiquity there are countless interesting and illuminating parallelisms. The two books containing Plutarch's *Lives of Greeks and Romans,* and both Cicero's *Letters,* and Pliny the Younger's *Letters to Trajan,* should be in every library. Brought down to our own personal interest, however, the several American documents which every school child should study—and every man or woman should re-read now and then, are: *The Mayflower Compact, The Fundamental Orders of Connecticut,* the *Massachusetts Body of Liberties,* Winthrop's *Arbitrary Government Described,* the *Declaration of Rights,* the *Declaration of Independence,* the *Constitution of the United States,* the first two volumes of *The Federalist, Washington's First Inaugural Address, Washington's Farewell Address,* the *Monroe Doctrine,* and *Lincoln's Gettysburg Address.*

Will any one gainsay the assertion that the reading of the above will vastly enrich his intellectual powers? Then make your first choice and start yourself on the road of mental satisfaction and pleasure.

❖ ❖ ❖

Get the Proper Balance

But for two things, you are the same today as on your birthday. Heart, lungs, liver, feet, arms, all the same. Nothing changes save your mind, and that only because of two things:

The men you have met—
The books you have read.

There is a thought there for the thinking man.

The Paper Industry Safety Contest

July 1 to November 30 (Cumulative)

17 Mills Still Have Perfect Score

PERFECT SCORES

Division I—Paper and Pulp Mills

	ENTRANT	MILL	LOCATION
GROUP A			
GROUP B	Champion Coated Paper Co.	No. 1	Hamilton, Ohio
GROUP C	Dells Paper & Pulp Co.	Eau Claire	Wisconsin
	Pioneer Paper Co.	Los Angeles	California
	Strathmore Paper Co.	West Springfield	Massachusetts
	Cornell Wood Products Co.	Cornell	Wisconsin
	Cons. Water Power & Paper Co.	Appleton	Wisconsin
	International Paper Co.	Montague	Turners Falls, Mass.
	U. S. Envelope Co.	Morgan Paper Div.	Lititz, Pa.
GROUP D	Continental Paper & Bag Corp.	Ashland	New Hampshire
	International Paper Co.	Livermore Falls	Maine
	U. S. Gypsum Co.	No. Kansas City	Missouri
	Hollingsworth & Whitney Co.	Madison	Maine
	International Paper Co.	Riley	Maine

Division II—Remanufacturing

Oxford Paper Co.	No. 2	Rumford, Maine
Cons. Water Power & Paper Co.	Stevens Point	Wisconsin
Kimberly-Clark Corp.	Atlas	Appleton, Wis.
Bemis Bros. Bag Co.	E. Pepperell	Massachusetts

IMPERFECT SCORES—Division I

	Key	Rank	Points Credit	Points Debit
GROUP A	PA-10	1	944.080	
	PA- 2	2	816.176	
	PA-11	3	652.304	
	PA- 3	4	636.832	
	PA- 6	5	353.008	
	PA- 5	6	249.216	
	PA- 7	7	117.072	
	PA-12	8		165.632
	PA- 1	9		452.960
GROUP B	PB-18	2	930.368	
	PB-16	3	804.128	
	PB- 4	4	675.248	
	PB- 9	5	605.760	
	PB-15	6	704.304	
	PB-22	7	705.488	
	PB-24	8	746.704	
	PB-19	9	734.256	
	PB-27	10	730.880	
	PB- 1	11	657.312	
	PB-20	12	605.568	
	PB-20	13	598.560	
	PB-14	14	575.552	
	PA- 4	15	524.080	
	PB-13	16	494.080	
	PB- 8	17	471.376	
	PB-17	18	388.272	
	PB-25	19	322.768	
	PB- 3	20	186.688	
	PB-21	21	78.688	
	PA- 8	22	42.104	
	PB- 2	23		13.088
	PB-12	24		220.112
	PB-10	25		747.344
	PB- 6	26		833.952
	PC- 8	27		927.504
	PB- 7	28		1,527.024
	Division II			
	RA- 1	5	950.992	
	RC- 9	6	797.264	
	RC- 6	7	607.200	
	RC- 8	8	496.256	
	RC- 3	9	394.256	
	RC- 2	10	339.568	
	RC- 5	11	217.344	
	RD- 1	12	141.920	
	RD- 3	13	56.832	
	RB- 1	14		168.000
	RD- 4	15		634.672
	RC-11	16		648.032

	Key	Rank	Points Credit	Points Debit
GROUP C	PC-33	8	842.800	
	PC-25	9	808.928	
	PC-10	10	806.352	
	PC-18	11	724.256	
	PC-43	*12	719.280	
	PC-30	13	621.808	
	PC- 9	14	603.168	
	PC-20	15	530.752	
	PC-11	16	498.944	
	PC-36	17	493.136	
	PC-38	18	475.248	
	PC- 1	19	468.224	
	PC-12	20	412.752	
	PC-49	21	362.496	
	PC-37	22	362.288	
	PC-44	23	346.288	
	PC- 2	24	190.480	
	PC- 3	25	167.696	
	PC-39	26	36.608	
	PC-31	27		22.336
	PC-21	28		74.032
	PC-28	29		110.960
	PC-42	30		260.080
	PC-32	31		334.144
	PC-30	32		332.416
	PC- 7	33		481.980
	PC-27	34		608.784
	PC-13	35		810.704
	PC-53	36		868.944
	PC-40	**37		948.880
	PC-17	38		1,193.840
	PC- 5	39		1,368.272
	PC- 6	40		1,910.400
	PC-47	41		2,223.216
GROUP D	PC-45	6	342.976	
	PC-46	7	33.344	
	PD- 2	8		601.776
	PD-10	9		724.880
	PD- 4	10		900.000

WITHDRAWN: PA-9; PB-11; 22, 26, 28, 29; PC-22, 26, 39, 41, 54, 55; PD-3; 5, 11; RC-4, 7 and RD-3.

No November Report: PC-4, 14, 15, 19, 35, 36, 57, 58; PD-12.

(*) No October Report.

(**) No September Report.

◆ R. H. Scanlon Married

Mr. R. H. Scanlon, well known to many readers of THE PAPER INDUSTRY, was married December 5 to Miss Mary Alfreda Murray, at Powell River, B. C. Following the ceremony, a reception was held aboard the Empress of Japan, on which Mr. and Mrs. Scanlon sailed for a honeymoon tour of Japan.

Mr. Scanlon is assistant resident manager and a director of the Powell River Co., Ltd., Powell River, B. C., and during the year 1931 served as Pacific Coast Regional Director for the Paper and Pulp Section of the National Safety Council. Mrs. Scanlon has been a member of the Powell River nursing staff for the past eighteen months.

◆ 21st Safety Congress in National Capital

The National Safety Council announces that Washington, D. C., has been chosen as the scene of the Twenty-first Annual Safety Congress, and the date will be October 3 to 7, 1932.

It is especially fitting that the Congress should be held this year in the National Capital, as the year 1932 marks the 200th anniversary of the birth of George Washington.

◆ THE ALL-OHIO Safety Congress will be held April 19 to 21, 1932, at the Neil House, Columbus, Ohio. The meetings of the Pulp and Paper Section will be held on the 19th and 20th, with D. C. Hunter, of the Oxford Miami Paper Company, West Carrollton, Ohio, as chairman.

◆ Compete for Title of "Safest City"

On January 1 a large number of cities, towns and villages in the United States, entered a huge inter-city traffic safety contest for 1932 which will stimulate better traffic law observance and enforcement throughout the nation. The contest is sponsored by the National Safety Council, and will continue for a year.

Competition will be between municipalities of similar size for lowered traffic death rates through improved law enforcement and public education. Awards will be made early in 1933 for the "Safest City" in each group, for the best in all groups, and for the states making the best aggregate record.

◆ This Year's A. P. & P. A. Meeting

General Manager Jesse H. Neal says that this year's meeting of the American Paper and Pulp Association is to be a "brass tacks" convention. Causes of the economic hardships which have confronted our industry will be ferreted out and remedies suggested. The fifty-fifth annual convention will take place at the Hotel Pennsylvania, New York, during the four days of February 15, 16, 17 and 18, and members and visitors are asked to make their own hotel arrangements. The annual dinner will be on the night of February 18.

As an economic measure, the members of the Supply & Equipment Section have agreed to omit the exhibit at this year's meeting. This does not mean that an exhibition during Paper Convention Week has been permanently dropped. On the contrary, plans are now being considered to provide much larger space, with a better location for exhibit purposes in 1933. W. N. Wilkinson, president of the Supply & Equipment Section, has announced that in lieu of the Section lunch, it has been suggested the members of the Section reserve places at specially grouped tables at the Annual Banquet of the Association on Thursday, February 18. Those desiring to join the group should communicate with Mr. Wilkinson as soon as possible.

◆ Heating and Ventilating Exhibit

The Second International Heating and Ventilating Exposition will open at Cleveland, Ohio, on Friday, January 25, in conjunction with the annual meetings of the American Society of Heating and Ventilating Engineers and the American Society of Refrigerating Engineers.

Among the new products developed during the previous year, which will be shown, mention may be made of such up-to-date equipment as unit boilers, new types of automatic boiler water feeders, threadless fittings for copper pipe, in which the joints are made by solder through capillary action; heaters which fit below floor-line in houses which have no basements; new methods of converting coal burning heaters into gas-fired apparatus; relative humidity recorders, and new automatic humidity controls.

◆ SEVENTY representatives of materials handling equipment manufacturers met in Cleveland, Ohio, December 5 and formed an organization to be known as the Materials Handling Institute. The object of this body is primarily educational, to promote mechanical handling, also a better understanding of the relationship in a co-operative way between the various groups.

POWER

GENERATION + UTILIZATION + MAINTENANCE

This section turns the searchlight on power and its allied problems, showing big possibilities to save. Opportunities to improve conditions, methods, apparatus will be discovered. Worth while practices suggest new ideas and wider usages of equipment.

By W. S. JOULE

◆ Distinguishing Between Air Infiltration and Over-Fire Air

As the combustion rate of a furnace and the steaming rate of a boiler are increased, the rate of air supplied to the fuel bed must be increased. Consequently at the higher combustion rates an increasing amount of air must be admitted above the fire (because it cannot be introduced in sufficient quantities through the fuel bed, because better mixing occurs above and for other reasons). Smoke prevention without waste also often calls for over-fire air. In some cases, as much as 60 per cent of the total air used enters from over the fire.

Much is said on all sides about the loss due to air infiltration, a loss that may range from 3 to 15 per cent and even more where the setting is cracked and exceptionally porous and in bad condition. Since this air infiltration, seepage or leakage of air into the furnace is largely "over-fire," the question arises as to why this air is so wasteful and objectionable if it is true that "over-fire" air is required sometimes as much as 60 per cent of the total air being introduced over the fire.

Air infiltration is objectionable because (1) it is uncontrolled air and (to be efficient, combustion requires closely controlled air supply); (2) it enters wherever it can get in to the furnace, whereas overfire air should be introduced where the minimum amount can accomplish the most good; (3) overfire air can often be pre-heated so as to increase the combustion efficiency, whereas the air that comes in through leaks is relatively cold, consequently creates "excess air" while reducing the furnace temperatures (though it may and often does raise the stack temperature by preventing the transfer from furnace to boiler contents). From all aspects, therefore, infiltration is objectionable, although some of it may be useful by contributing part of the over-fire air required for complete combustion, hence smoke eradication.

Where the air entering through the fuel bed or introduced over the fire is controlled, it can be regulated according to the requirements. Where air leaks in through porous setting, cracks, leaks between refractories and steel, it is beyond the control of the man responsible for the fires. Not only does it tend to lower furnace temperatures while increasing stack temperatures and so lowering combustion efficiency, but this air infiltration tends to overload stacks, cause congestion in the boiler passes and lower the over-all of furnace and boiler.

Air infiltration is vagabond air. It is beyond control. It enters where it can do least good and enters in largest quantities when it will be most objectionable. The remedy, then, is to keep settings tight so that whatever "secondary air" or "over-fire" is required can be furnished when and where and in the quantities wanted. Over-fire air is desirable, and the higher the combustion rate, the more it is required on the score of combustion efficiency, furnace capacity and smoke prevention. Air infiltration, on the other hand, is wasteful and objectionable, even where a portion of it may serve as over-fire air, because beyond control.

◆ How Dirty Is Your Steam?

Someone has said that more impurities leave through the steam nozzle than through the blowdown. Whether this is exactly true or not is immaterial. The fact remains that an immense amount of dirt is carried over by the steam to work havoc in many different ways, directly and indirectly.

The amount of dirt contained in steam is rarely appreciated, because it is scattered over a very wide area — superheater surfaces, piping and fittings, turbine blades, condenser tubes—comprising very considerable surface. For this reason the actual amount of dirt is invariably underestimated and a large amount of damage may be done before it is unsuspected.

Whenever this matter is allowed to collect where it can be visualized, it can be appreciated at its true significance. It is only then that the large amount of dirt is realized.

The dirt should be removed before it passes through reducing valves, etc., so preventing scoring, erosion and attrition. Going further back toward the boiler or source of supply it will be found that this same material causes corrosion and pitting of superheater surfaces, fittings, etc. It causes erosion of valve seats. It interferes with heat transfer, causes clogging of small orifices and has a cumulative effect in reducing the capacity for steam flow. The amount of material coming over is not a constant, but may vary widely with the load and seasons, being affected by the method and care employed for water treatment, the height of water level carried, the extent that priming and foaming occur and to what extent valves pop.

Foreign matter in water also causes trouble in various ways—often at most inconvenient times—although water is usually considered as being relatively free from other than small particles of material carried in suspension. Snail shells, wire, glass, bolts, screws, miscellaneous vegetation, earth, filth and other matter may comprise the make-up of the deposits thrown down by water. Fish have been known to cause water turbines to run away; interrupt high-voltage transmission lines by killing excitation from water-driven units; interfere with engine regulation; cause water-cooled transformers to catch fire as well as interfere with conditions in general. Under many conditions a strainer or screen is absolutely necessary. In most instances it is always desirable, for it results in material being concentrated in one location, where it can be most easily removed. In choosing a screen or strainer for this purpose, it is well to see that it is easily accessible, that it can be easily replaced and that it is fine enough to hold back the major amount of foreign matter and of sufficient cross section not to offer obstruction to the flow of water.

A strainer or screen can be easily replaced or cleaned at nominal cost when worn, whereas the matter which it retains may cause widespread havoc that can be overcome otherwise only at high cost and after a shut down.

◆ TEMPERING or wetting down bituminous coal reduces the total available heat because the water added for tempering down must be evaporated. However, the ash pit loss will be less; a smaller amount of fines will be blown up the stack; the fuel bed will be more homogeneous and fires will require cleaning less often. Average combustion efficiency will be higher, and higher evaporation rates can be maintained. Care should be exercised, however, that only enough water for the purpose should be used, and this will usually range from 1½ to 5 per cent by weight. The effect of tempering is mechanical and in no way chemical.

◆ THE "STRAIGHT LINE" method of figuring depreciation is the simplest. This consists of dividing the total cost of an asset by the number of years it is expected to be available for useful life. The result gives the amount that should be charged off each year for depreciation. It should be borne in mind, however, that obsolescence may scrap apparatus in a few months whereas depreciation would be spread over 10 years or more.

Cleanliness and Uniformity Features of New Weyerhaeuser Pulp Mill

Pure water, clean wood and strict control of manufacturing processes yield high grade product in 175-ton bleached sulphite mill at Longview, Washington.

COMPRISING a total of ten major buildings besides several tanks and storage chests, the new 175-ton capacity bleached sulphite plant of the pulp division of the Weyerhaeuser Timber Company went into production late in November, giving employment to 175 men. Chris Kuppler's Sons of Port Angeles, Wash., were the general contractors and O. C. Schoenwerk designer and consulting engineer.

The plant is located on a considerable stretch of water frontage along the Columbia river, which is part of the 700-acre site of the Weyerhaeuser operations. The large timber holdings of the company in Cowlitz County will provide western hemlock for manufacture, most of this in the form of logs passing through the sawmill adjacent to the pulp plant. Only the highest grade of bleached pulp suitable for any desired grade of paper is to be produced in the plant.

The pulp storage warehouse, 165 by 280 feet in dimensions, is of wood construction, as are also the chipping plant, chip storage building and office. The remainder of the ten buildings are of concrete, including the filter plant, acid plant, digester building, unbleached screen building, bleaching plant, bleached screen building and machine building, all of these finished in dairy white in an imposing arrangement.

A straight line system of production is operative in the plant, with each unit so constructed that expansion may be achieved when necessary without disturbing the general balance of the mill.

Holding to an ideal of absolute cleanliness throughout the whole process of the pulp manufacture, wood has been used extensively in the design of the plant. All stock and water lines, all stock and storage tanks, white water tanks, acid tanks, blow pits, machine head box and rifflers are composed of wood. The continuous stave wood pipe used throughout the entire mill is bound at close intervals with individual steel bands which provide for any necessary adjustments in tension. Over 120,000 feet of kiln dried Douglas fir and cedar has been used in construction of the wood pipe alone. All fittings connected to or integral with the wood pipe are of leadized steel to completely eliminate any danger of rust.

Filter Plant

The filter plant has a capacity of 20,000,000 gallons of water a day, the raw water being taken from the river through a 40-inch wooden pipe. The chemicals are charged in large concrete mixing tanks from which the water is flowed into two 1,780,000-gallon settling basins and later through the sand filters.

A group of three pumps carries a continuous uniform pressure through the mill regardless of the volume demand.

Chipping Plant

The pulp logs are broken down by one of the sawmills into cants and these are conveyed to the chipping plant and transferred to four power barkers which cut the bark from the wood. The cants then pass to knot saws and knot boring machines which remove all unsound portions of the wood, and are then washed with heavy showers.

This clean wood is then fed into chippers and the chips screened over four shaker type chip screens and carried by belt conveyor to the storage plant.

The chipping plant is of dust proof construction and ventilated with washed, filtered air, eliminating the possibility of dirt in the chips.

Chip Storage

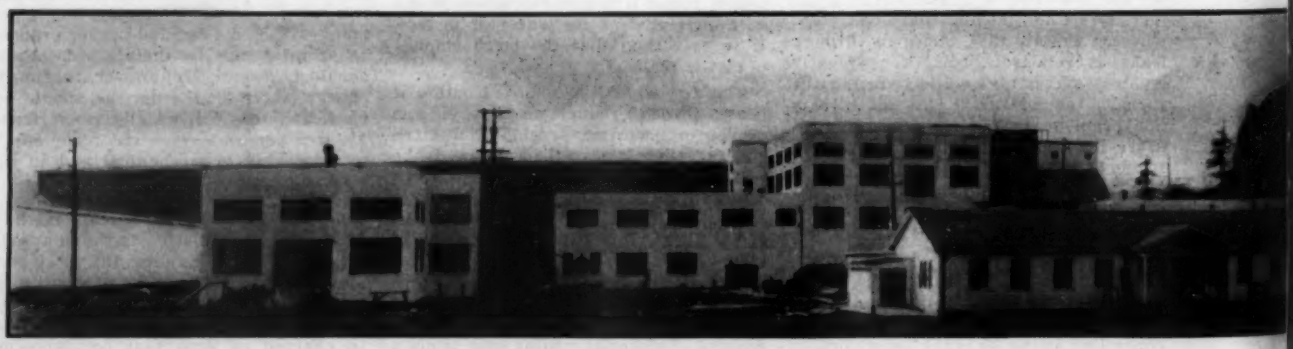
This plant is designed to carry the maximum amount of chips at their natural angle of repose. From the conveyor the chips fall into the top of the chip storage into a pile which conforms to the curve of the Lamella type roof used.

Bins have been provided to allow segregation of chips where this is desirable. These bins are so designed that a complete cross section of the bin is moved out on its individual conveyor whenever chips are withdrawn, thus insuring complete rotation of the contents of the bin. From chip storage the chips move on conveyors to the digesters.

The operator of the digesters controls all chip feeding from the operating floor, the entire process being mechanical and subject to his control.

Acid Plant

Equipment in the acid plant was furnished by the G. D. Jenssen Co., the raw acid being filtered through a large capacity sand filter before being pumped into the storage tanks. The Chemipulp recovery system accumulates the relief gases and heat from the digesters. Additional apparatus which controls the quality of the acid and assures uniform-



Panorama view of the

In the right foreground is the office building, behind which are the structures housing unbleached screen equipment and chip storage. Next are the bleachery and the screen room for bleached pulp, on the ground floor of which is the spacious laboratory. A 50-ton blending and storage chest lies between the bleachery and the machine building in the left foreground. At the extreme left can be seen a portion of the 6000-ton pulp storage warehouse.

Blow pits and vomit stacks photographed as a digester was being blown during first few days of operation

ity in pulp quality is also installed in the acid plant.

Digesters

Six digesters, each with a capacity of fifteen tons, were considered preferable to a smaller number of large ones, according to Mr. Schoenwerk. These digesters with their measured control of intake steam and regulated relief, will minimize variables in cooking and insure positive circulation of the cooking liquor. Small digesters eliminate peak steam loads and assure steady steam pressure. The smaller and more frequent charges of acid level off the demand on the acid plant, allowing a uniform acid composition. The cooking process requiring 12 hours permits of two charges daily. The digesters are accessible from four levels.

Blow Pits

The blow pits have been designed to furnish the maximum of washing and draining area. Each digester is provided with a blow pit equipped with stainless steel bottoms and target plates. The washed stock from the blow pits is pumped over an Oliver washer. A regulator controls consistency before dropping the stock into a fifty-ton blending tank. In this tank screw tank pumps are used for blending, and with this type of equipment the blending of the pulp is accomplished without hydration.

Unbleached Screen Room

Passing over the coarse screens the pulp runs over riffiers 8,000 square feet in area and thence by gravity flow goes over 48 fourteen-plate inclined flat screens. From this room the stock which has received complete treatment as to consistency goes to the unbleached stock storage tank.

Bleach Plant

Three-stage bleaching is employed in the plant with attention to complete and thorough washings after each stage of bleaching, with equipment that provides accurate control of pulp consistencies, temperature and chemical concentrations.

In the bleach plant the pulp is run over a second set of riffiers 6,500 square feet in area and through a second battery of 16 fourteen-plate inclined flat screens. This second riffling and screening picks up any foreign substances that may have remained from previous processes.

After this final screening the stock is thickened and pumped into a second blending tank of 50 tons capacity. The same type of screw pump is employed in this stage of the operation as that used in the unbleached blending tank.

Drying Machine

The drying unit consists of a 156-inch fourdrinier wet end with seven suction flat boxes, suction couch roll and two suction press sections. Equipped with an automatic weight and caliper control mechanism, a sheet of constant caliper, basis weight and moisture content is passed into the Minton vacuum dryer for final drying.

The Minton dryer operates under 28 inches of vacuum, the thirty-six 60-inch drying cylinders being completely housed in an airtight metal chamber.

Packaging and Storage

The pulp coming from the vacuum dryer is cut into sheets 30 inches square and built into bales of 400 pounds each on scales at the end of the cutters. These bales are passed to the hydraulic presses, where they are pressed to a given cubical content. From the presses the bales go to the wire tying machines, and thence to the pulp storage warehouse for rail and water shipment.

Schoenwerk Designer of Many Mills

The complete design and supervision of construction of the new plant was accomplished by O. C. Schoenwerk, consulting engineer, of Winnetka, Illinois. Prior to his present engineering practice, Mr. Schoenwerk was active in pulp and papermaking on the west coast in a managerial and operating capacity.

Weyerhaeuser Timber Company's pulp mill at Longview, Wash.

At extreme right of picture is the 20,000,000 gallon daily capacity filter plant. Further from right to left can be seen the acid plant, digester building, blow pits and vomit stacks. In the background is the historic Coffin Rock, an old Indian burying ground, beyond which is the Columbia River.

He has incorporated into the new mill a rich fund of knowledge and experience accumulated from a field of wide activity.

Mr. Schoenwerk has been identified in the construction and operation of several Pacific Northwest mills. As a division vice president for the Crown-Zellerbach Paper Co. he designed and supervised beginning operations of three pulp and paper mills and during the same period was consulting engineer on three others built by the Crown-Zellerbach interests. The list of well known mills with which he was identified includes the Grays Harbor Pulp and Paper Co., Hoquiam; the Rainier Pulp and Paper Co., Shelton; National Pulp Products, Port Townsend; Washington Pulp Products Co., Port Angeles; Northwest Power Co., Port Angeles, and the Olympic Forest Products Co., Port Angeles, all in the State of Washington.

Quality of Labor Important Factor

Officials of the Weyerhaeuser company have given very special attention to labor employed. B. T. Larrabee, superintendent, stated that only the highest class workmen skilled in their line of labor were chosen, all of long proven ability and intelligence.

Record in Construction Time

Approximately 17 months after announcement was made of plans for the Weyerhaeuser pulp mill, the plant went into operation. "We have aimed at a uniformity of product," says Robert B. Wolfe, general manager of the pulp division. "Throughout the entire manufacturing process the control of variables has been accomplished by the application of scientific measuring, metering and calibrating devices."

Physical Advantages of Longview

The city of Longview is situated on the Columbia river near the mouth of the Cowlitz river, in the heart of the forest and mountain district of the Pacific Northwest.

Part of the Weyerhaeuser laboratory where sample paper is made for testing purposes. A chart room, constant humidity and general chemical testing room adjoin this section

Longview was incorporated in the year 1924 and has enjoyed a phenomenal growth. Its strategic location has made it an ideal location for pulp and paper mills. The enormous forest resources insure a perpetual supply of raw material. The Columbia river can supply in practically unlimited quantities process water for any of the present methods used in pulp production. It has a fine deep water harbor leading directly to the Pacific Ocean. Sulphur may be brought in from gulf coast points at lowest possible freight rates, and finished products may be shipped by water at low freight rates. Four transcontinental rail lines provide for shipment by rail to all parts of the United States.

In the counties surrounding Longview there are no less than three million acres of absolute forest land which will be used for the growing of timber permanently.

View of constant humidity room in the Laboratory

Aside from the new Weyerhaeuser plant, here are located two of the most up-to-date mills on the coast: the Pacific Straw Paper and Board Co., with a capacity of 40 tons, and the Longview Fibre Co., a 150-ton kraft mill.

Personnel of Weyerhaeuser Pulp Division

R. B. Wolfe—R. B. Wolfe, for the past seven years president of the Pulp Bleaching Corporation of New York, is general manager of the Weyerhaeuser pulp division. His past experience includes the superintendency of the sulphite mill of the Union Bag and Paper Company of Hudson Falls, N. Y.; general manager of the Burgess Sulphite Fibre Company (now the Brown Co.), Berlin, N. H.; general manager of the Spanish River Pulp and Paper Mills, Ltd., at Sault Ste. Marie, Ontario.

During the war, Mr. Wolfe was assistant to Vice-President Piez of the Emergency Fleet Corporation at Washington, D. C.

Mr. Wolfe will maintain his offices at Longview.

Ben T. Larrabee—Ben T. Larrabee, who has been in Longview since last May assisting in supervision of construction, is superintendent of the pulp mill. He was for many years associated with the S. D. Warren Company at Cumberland Mills, Maine, in the capacity of

Operating floor of the digester plant of the Weyerhaeuser pulp mill

superintendent of the sulphite mill. In 1929, when this company discontinued the manufacture of sulphite pulp, Mr. Larrabee came west to be superintendent of the Olympic Forest Product's plant at Port Angeles, where he remained until joining the Weyerhaeuser company. He was president of the American Pulp and Paper Mill Superintendents Association in 1929.

W. Norman Kelly—W. Norman Kelly has been associated with the Pacific Coast pulp and paper industry for ten years. He is now assistant superintendent at the Weyerhaeuser plant. He was formerly with the Washington Pulp and Paper Company at Port Angeles and recently sulphite superintendent at the Grays Harbor Pulp and Paper Company's plant at Hoquiam.

Ralph B. Hansen—Ralph B. Hansen, technical director in the new pulp mill, was named chairman of the Pacific Section of the Technical Association of the Pulp and Paper Industry at the meeting in October. He is a graduate of the University of Washington and later worked in the chemical engineering department of the university. Later he was chemist for three years in the plant of the Rainier Pulp and Paper Company at Shelton, and immediately before joining Weyerhaeuser he was chief chemist at the Olympic Forest Products plant at Port Angeles.

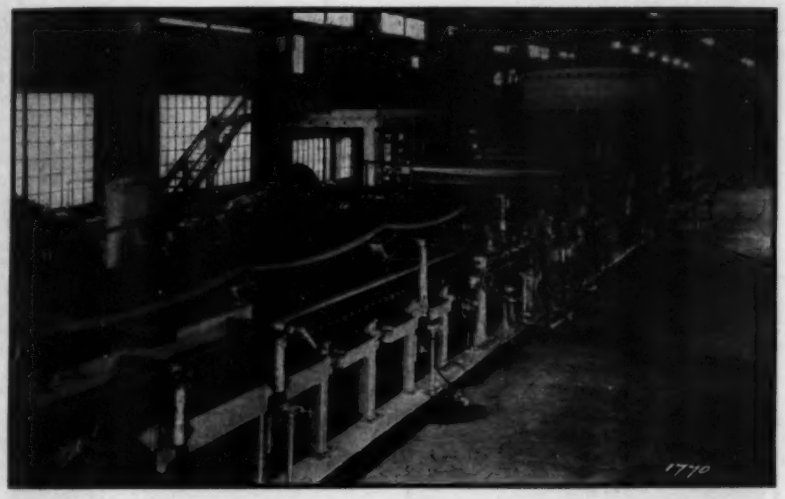
Edward Wood—Edward Wood is operating chemist of the Weyerhaeuser pulp division, having formerly been chief chemist for St. Regis Pulp and Paper Company at Tacoma. He was at one time superintendent of the sulphite mill of the Oregon Pulp and Paper Company at Salem, and he also had experience for several years with the Stebbins Engineering Company.

Sales Division—Henry F. Bigelow, Jr., will represent the pulp interests of the Weyerhaeuser company in eastern territory with headquarters in Clinton, Mass. Mr. Bigelow was formerly associated with Atterbury Brothers, Inc., New York.

G. S. Brazeau will serve the middle western territory from headquarters at 307 Michigan avenue, Chicago, coming to his present position from the Northwest Paper Company of Cloquet, Minn.

Operating Department Men—H. R. Heuer, mill foreman, was formerly with the Hawley Pulp and Paper Company at Oregon City, but recently with the Newton Falls Paper Company, New York.

Walter Clough was with the Cumberland Mills, Maine, before joining Weyerhaeuser as night superintendent. Arthur Blair, with several years' experience in northwest mills, is master mechanic, and Charles Walton, pipe foreman.



Rice, Barton & Fales 175-ton sulphite pulp drying machine in Weyerhaeuser mill

Manufacturers Who Contributed to Completeness of Weyerhaeuser Mill

Downington Mfg. Co., Downington, Pa., furnished suction couch and suction press rolls, with rear suction, direct drive and trouble-proof bearings.

Freeport Sulphur Co., Freeport, Texas, will supply sulphur.

Sleight Bituminous Products Co., Baltimore, Md., through the Merriman Paint Co., Seattle, furnished "Dairy White" for the exterior of many of the buildings.

Toledo Scales Co., Toledo, Ohio, supplied scales and precision devices.

Willamette-Ersted Co., Portland, Oregon, will have its "Utility" carrier on the job in five operations of this plant.

Bingham Pump Co., Portland, Oregon, installed 52 Bingham pumps for handling stock—white water—acid—milk of lime and sewage. Also the Bingham company installed 15 Bingham Agitators and seven Bingham Recording Consistency Regulators. The Bingham pumps were used exclusively throughout the Weyerhaeuser plant, as were also the agitators and consistency regulators.

William A. Hardy & Sons Co., Fitchburg, Mass., supplied chrome nickel steel valves, and 896 Hardy cast bronze screen plates.

Rice, Barton & Fales, Inc., Worcester, Mass., designed and installed the 175-ton sulphite pulp drying machine. This machine weighs 1,840,000 pounds and was shipped from the Port of Boston by way of the Panama canal to the Longview dock of the Weyerhaeuser company at what is said to have been a very low transportation cost.

Pulp Bleaching Corporation, New York, placed the equipment in the bleaching department, all of this installation being of the latest type for the creation of highest pulp standards.

G. D. Jenssen Co., Seattle and New York, installed the Jenssen Two-Tower Limestone Acid System and Kamyr Feltless Pulp Press.

Chemipulp Process, Inc., Watertown, New York, with its Chemipulp system in the Weyerhaeuser plant marked the seventeenth installation of this kind in pulp mills throughout the United States and Canada, bringing the total sulphite pulp now produced by this system to 600,000 tons annually.

Fibre Making Processes, Inc., Chicago, installed four F. M. P. Combined Coarse Screen and Knotter Screens.

American Hard Rubber Co., New York, Akron, Ohio, and Chicago, installed noncorrosive pipe lines, ace hard rubber-lined pipe, pumps, valves, and tanks.

Baldwin-Southwark Corporation, Philadelphia, installed pulp presses.

Merco Nordstrom Valve Co., supplied valves.

California Filter Co., Inc., installed the 20,000,000 gallon filter and **Hall Laboratories System** for the conditioning and control of boiler feed water for the steam plant.

Stebbins Engineering Co., Watertown, New York, supplied white linings, digester linings, acid tower linings, combustion chamber linings, tank linings and floors and drains.

Albany Felt Co. furnished pulp felts for the machines.

Hooker Electrochemical Co. will supply liquid chlorine, caustic soda, muriatic acid and other chemicals. **General Chemical Co.** also supplies aluminum sulphate and several other chemicals.

Crane Co. supplied valves, fittings and piping materials.

Oliver United Filters, Inc., installed six Oliver United Units.

Foxboro Co. installed instrumentation.

National Tank & Pipe Co., Portland, furnished wooden pipe.

Valley Iron Works supplied deckers.

Chris Kuppler's Sons, contractors who built the mill, were also previous builders of the plants of the Washington Pulp and Paper Co., Port Angeles, Wash.; Rainier Pulp and Paper Co., Shelton, Wash.; Grays Harbor Pulp and Paper Co., both units, Hoquiam, Wash.; National Paper Products Co., second unit, Port Townsend, Wash.; Olympic Forest Products Co., Port Townsend, Wash.

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◆ AT THE ANNUAL meeting of the American Standards Association held in New York last month, Bancroft Gherardi was re-elected as president. Mr. Gherardi is vice-president of the American Telephone and Telegraph Co.

ELECTRICAL DEVELOPMENTS during Year 1931 in the Pulp and Paper Industry

By R. R. BAKER, Paper Mill Engineer
Westinghouse Electric & Manufacturing Company

FOR YEARS the pulp and paper industry has looked to the electrical industry, not only to supply its motive power, but to solve many problems in the proper application of such equipment. The year 1931 has been no exception. During this year numerous opportunities were afforded the mills to effect economies in operation and to more accurately control their processes. Many of these opportunities were made possible only through the use of new or improved electrical equipment.

The pulp and paper industry is one in which each individual mill has extensive requirements for both heat and power and we find that both of these items enter largely into the cost of the finished product. Over a period of the past ten years the mills have done a great deal to economize in the use of both heat and power. Evident cases of direct heat losses have been eliminated through improved boiler-house design and in the proper application of heat to the industrial processes. In an effort to obtain low cost heat and power and to approach the ideal condition where the total mill power requirements are obtained as a by-product of the heat requirements, steam pressures and temperatures have been raised and the pulp and paper industry has been among the foremost in adopting these modern operating practices.

The seasonal and daily variations in power and heat requirements have led to the development of suitable non-condensing and bleeder type of turbine units which are designed to deliver various amounts of steam at one or more reduced pressures. Such turbines, depending upon their application, can be arranged to operate independently, governing both their speed and the bleeder pressures, or they may be phased in with electrical systems and govern only the bleeder pressures. The past year has witnessed a number of installations of these types of prime movers.

In order to meet the operating economies of the more modern mills, older mills are frequently confronted with the problem of replacing antiquated steam drives on their paper machines. The modern type of electrical drive of either the sectional or single motor type, permits of a very satisfactory solution to this problem. Such drives provide very accurate speed control over the wide speed ranges often necessary; and are independent of such disturbing factors as steam pressure variation, which so frequently handicap the steam driven unit.

Electric Drive for Heat Balance

It is often desirable in installing electrical drives of these types to arrange for a heat balance so as to permit of the most economical use of the steam required in the paper machine dryers. This can be accomplished by using a non-condensing, constant-speed turbine to drive both a D.C. generator for furnishing power to the paper machine driving motor, and an A.C. unit which serves to balance the load on the turbine. With this arrangement, and by the use of a suitable back pressure regulator, the turbine passes just sufficient steam to meet the process requirements. The total power generated by the turbine is delivered to both the D.C. and A.C. units. Only sufficient power is developed by the D.C. unit to meet the power requirements of the paper machine which may be operating at any particular speed within its speed range. The balance of the power generated is delivered to the mill bus through the A.C. unit.

A drive of this type is now being built for the Thilmany Pulp & Paper Co. of Kaukauna, Wis. The turbine unit consists of a 800 kw. non-condensing turbine taking steam at 185 lb. pressure and exhausting at 35 lb. pressure driving through a reduction gear a 1200 r.p.m. 625 kv-a. 80 per cent power factor A.C. and a 300 kw. D.C. unit. The D.C. generator furnishes power for two paper machines which will be driven by duplicate 33-100 hp., 333-1000 r.p.m., D.C. motors. These motors are designed to operate over the 3 to 1 speed range by field control. Each single motor paper machine drive is provided with modern speed regulating equipment of the carbon pile type.

Although this arrangement of drive is not a development of the past year, a drive of this type having been installed as early as 1926 in the mill of the Crocker Burbank Co. of Fitchburg, Mass., it represents a development which frequently permits older mills to operate with greater economy through the proper application of electrical equipment.

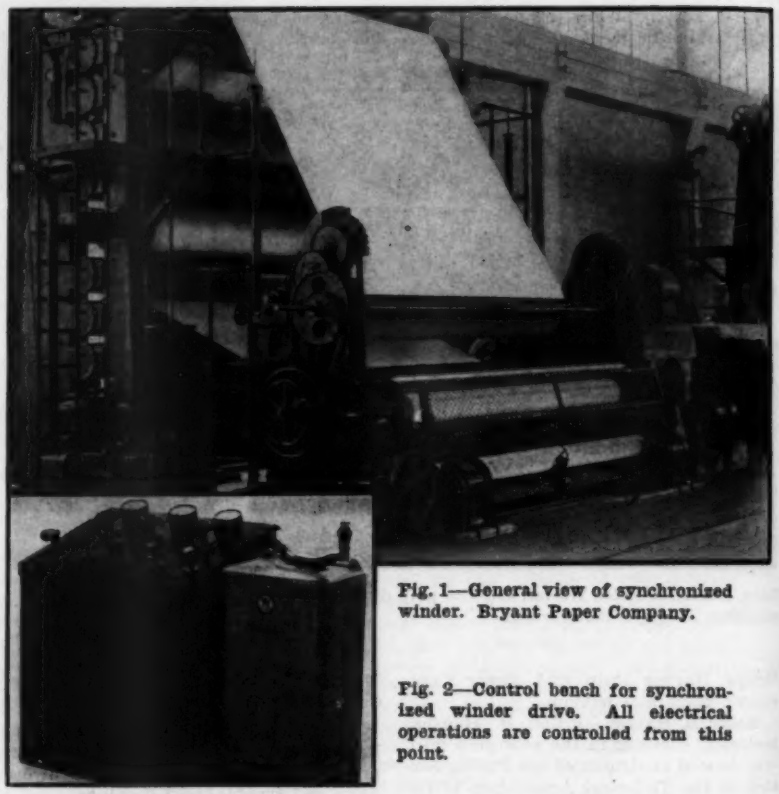

Fig. 1—General view of synchronized winder. Bryant Paper Company.

Fig. 2—Control bench for synchronized winder drive. All electrical operations are controlled from this point.

Closer Motor Control

In certain of the industrial processes, operating efficiencies can be increased and manufacturing cost lowered by proper motor and control application. An interesting example of such an application is the synchronized super-calender and winder drive at the mill of the Bryant Paper Co., Kalamazoo, Mich. This installation shown in Fig. 1 was made on a 160-in. Textile Finishing Machinery Co.'s super-calender served by a No. 48 Cameron winder and designed to operate up to a maximum speed of 900 f.p.m.

The main drive for the super-calender is of the dual frequency type and first installed at the Kalamazoo Paper Co.'s plant, Kalamazoo, Mich., in 1922. This calender is driven by a 250-hp. wound-rotor type induction motor through suitable enclosed self-contained gear units. Low frequency is supplied to operate the motor at the threading-in speed and the standard mill frequency is used for all other speeds. The low frequency is supplied by a self-driven frequency-changer which supplies two calenders of identical size.

The winder is driven by a slip-ring induction motor, coupled to the equipment through suitable gear reduction. The winder motor is synchronized with the calender by means of a slip-ring induction generator driven from the stack which, through the introduction of excitation from the A.C. power supply, serves as a speed reference. Draw in the sheet between the winder and the stack is obtained by the introduction of a phase advancer equipment in the circuit between the winder motor and the speed reference generator.

The unwinding stand is provided with a D.C. electrical unit which is geared to the unwinding reel. This unit serves both as a braking generator to introduce the proper tension into the sheet between the unwinding stand and the stack when calendering, or as a motor to feed paper to the stack while threading the calender. When operating as a braking generator the energy is returned to the calender through a D.C. motor coupled to the calender drive.

Fig. 3—One of the 228-in. two-drum, 3000 ft. winders with braking generator for automatic tension control in foreground and only one of the winder motors in sight. Operator is standing beside winder drum type control, Main Seaboard Paper Company.

When operating as a motor, power is supplied from a suitable D.C. source. A regulator is provided, so that when operating the calender at productive speeds with the unit functioning as a braking generator, the tension in the sheet between the unwinding stand and stack can be automatically maintained from a full to an empty reel.

The operating features of the complete drive are obtained from a central control desk (Fig. 2) where indicating meters, control rheostat, operating switches and the main master switch with secondary drum control for speed adjustment are located. From this station the operators can start, stop, adjust speed, and adjust tension between winder or unwinding stand and calender, and control the unit on the unwinding stand, operating it as a motor feeding paper to the stack. The control also includes a number of separately mounted start and stop push button stations which are located conveniently about the machine.

This type of synchronized super-calender and winder drive with braking generator, tension control and the many control features, permits of economies of operation impossible with previous layouts where the calendered sheet was first wound and then removed to a second winder where it was rewound into shipping rolls. Accurate control and maintenance of the tension in the sheet between calender and winder and between unwinding stand and calender is obtained, so assuring maximum production, fewer brakes and calender cuts, and better wound rolls.

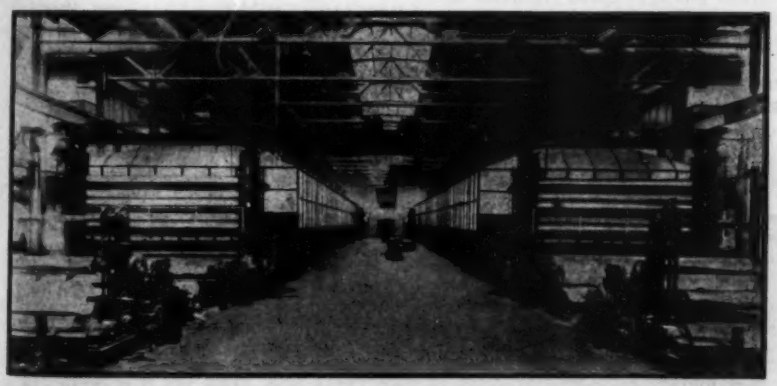

Fig. 4—Winder end of two 228-in. news machine recently installed at Maine Seaboard Paper Co., designed for a maximum of 1450 f.p.m., and equipped with Westinghouse sectional electrical drive using carbon pile sectional speed regulators.

The variable voltage type of drive for winders and rewinders employing one or more D.C. motors supplied with power from a motor generator set with speed control obtained by adjustment of the generator voltage, has been in use for a number of years. Such drives, using direct connected or geared motors for each of the winder drive shafts eliminate all open gearing, clutches, slip belts and counter shafting which were ordinarily supplied with the older types of drive, thus increasing the efficiency, materially reducing the maintenance expense and lessening personal hazards.

The recent Westinghouse development of a braking generator for the unwinding stands with tension control of the sheet between the unwinding stand and winder for application to this type of drive has proved quite successful. The recently installed 228-in. Rice Barton and Fales high speed news machine winders at the mill of the Maine Seaboard Paper Co. (Fig. 3) are equipped with drives of this type. These winders, of the two drum type with individual motors applied to each roll shaft, are operated up to a maximum speed of 3000 f.p.m. The individual roll drive with automatic control of the sheet tension permits winding more satisfactory rolls with a high degree of efficiency. The braking energy which with older types of winder drives would be dissipated in the mechanical brake, is returned to the winder through the braking generator. This same system of braking generator with tension control is also applicable with certain modifications to existing winder drives.

Sectional Paper Machine Drive

During the past few years considerable development work has been carried on with sectional electric drive for the paper machine. Such a drive, at the present time, costs little if any more than the latest types of mechanical drive. Its use assures greater productive efficiency resulting from increased flexibility, more accurate control of draw, and reduced operating cost resulting from lower maintenance and power consumption. The sectional electric drive has been profitably applied to machines of practically every type and speed range, a typical example being shown in Fig. 4. Some of the features of this modern electric drive include:

- Sensitive and accurate control of draw;
- Accurate indication of the performance of each individual section of the machine;
- Elimination of all power belts and clutches;
- Assurance of uniform speed of the paper machine regardless of such disturbing factors as steam pressure variation and load changes;
- Uniform slow speeds for inching of the various sections;
- Complete and convenient individual section control with start, stop, inch, lock-safe and run, pushbutton stations and draw adjustment devices located on the front side of the machine;
- Dynamic braking for high-speed, high-inertia dryer sections, and
- Provision for reversing direction of rotation of the calender stacks.

A comparatively recent development is the slack take-up for the calender and reel sections of the machine. This equipment enables the operators to momentarily speed up each of these individual sections by pushbutton control, thus quickly taking out the slack in the sheet which is ordinarily present immediately after it has been threaded through the section. This operation is performed without altering the permanent draw adjustment of the section. The use of this equipment permits putting the sheet through the calenders and on the reel in a minimum of time and with the minimum loss of production from calender cuts and wrinkles.

The regulated type of adjustable speed single D.C. motor drive still continues to be popular for paper machines where the lineshaft and mechanical parts of the drive are still suitable for further service and where economies can be effected through electrification of these drives. Such a drive consisting of a motor generator set, D.C. motor, control and speed regulating equipment, is suitable for paper speed ranges up to 10 or 12 to 1. Fine speed adjustment is obtained by armature voltage, by field control or by a combination of the two, through motor operated rheostats. Accurate speed regulation is assured over the operating speed range by the use of a carbon pile type speed regulator operated in conjunction with a pilot generator driven from the lineshaft.

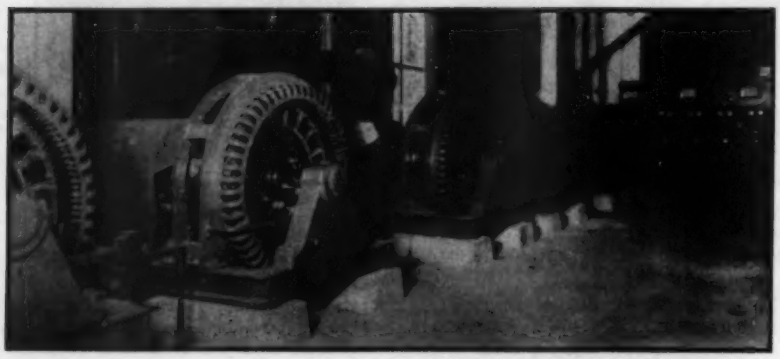

Fig. 5—Six 350 hp. pedestal type synchronous motors driving jordans, installed in Blandin Paper Company, Duluth, Minn.

Synchronous Motor Applications Widening

The desirability of a proper balance of the induction and synchronous motor loads in the mill so as to obtain the full advantage of the installed generator, transformer, switching and feeder circuit capacities, and also that such a balance assures higher power factor, lower losses and more stable mill voltage has for some time been well recognized. These beneficial results have led to many applications of the synchronous motor in the industry. We now find grinders and jordans using the synchronous motor almost exclusively. This motor is also extensively used for pumps, beaters, chippers, etc. This rather extensive use of the synchronous motor has resulted in the development of suitable full automatic pushbutton control equipment of the reduced voltage or full voltage type. This simplified form of starting equipment makes the control of the synchronous motor no more of a problem to the operator than that of the ordinary squirrel-cage induction motor.

Quite recently pedestal type synchronous motors have been applied to jordans and other slow speed applications. These pedestal type motors (Fig. 5) have been designed to permit of a maximum rigidity in the rotor and motor frame. The pedestals are built with a low center of gravity and an extremely wide base, typical features of a sturdy construction. The bearings, of the self-aligning type, have been designed on the well-known sealed sleeve principle, which assures freedom from oil leakage and oil contamination from the surrounding atmosphere. Where these motors are to be applied to jordan drives, they are provided with excess thrust capacity to prevent excess heating and wear of the bearings as a result of the jordan plug adjustments.

In the application of synchronous motors to the industry, there has been a requirement for a motor which would develop satisfactory starting and pull-in torque without excessive current peaks.

Fig. 6—A cubical control for 550 and 2300 volt motors in the filter plant installed at Weyerhaeuser Timber Company's new pulp mill at Longview, Wash.

This applied particularly to motors of speeds from 514 to 1800 r.p.m. In the past, such applications have been taken care of by reduced voltage or a two-winding system of starting. Both of these starting systems require more control equipment than the full voltage starter, however, which adds to the complications and increasing the possibility of failure. A synchronous motor having a special damper winding has recently been developed and placed on the market. This motor when started directly across the line will develop starting and pull-in torques with current inrushes equivalent to the former designs when using the more complicated starting arrangement. This design is particularly applicable to pumps and other high speed applications.

Another recent synchronous motor design gives the synchronous motor starting characteristics similar to the wound-rotor induction motor. In addition to the D.C. excitation and slip rings, this motor has slip rings connected to a distributed phase winding in the D.C. pole faces of the rotor. The motor is started in a manner similar to a wound-rotor induction motor by proper automatic control of the secondary resistance connected in the damper winding circuit. When the motor approaches synchronous speed, the D.C. field excitation is automatically applied and, after synchronizing, the unit operates as a synchronous machine. Such a design has the advantage of high starting torque and low kva. inrush. A motor of this type in certain special cases, such as mills having limited generating, transformer or transmission line capacity, can be applied on grinders, barkers, lineshafts or other heavy duty drives.

Improved Motors and Switchboards

Perhaps the most popular motor of the industry is still the squirrel-cage induction motor, which is applied to practically all the miscellaneous constant-speed drives about the mill. The motor must be rugged and capable of standing considerable abuse. It is often located where it can get but infrequent inspection and where both moisture and load conditions are severe; and must be kept in service 24 hours a day 6 days a week, as the operation of the mill depends upon its continuous service. To operate satisfactorily under such conditions, the motor must be of adequate electrical and mechanical design.

Recent developments have improved the mechanical design of these motors. The windings are provided with moisture resisting insulation. Bearings of the sealed sleeve type which assure an adequate supply of clean oil and prevents oil leakage are available in all sizes. Where anti-friction bearings are desirable, the motor brackets have been made adaptable for the wide inner-race bearings. Such bearings assure adequate fit of the inner race on the shaft, preventing the bearing from becoming loose and allowing the inner-race to rotate on the shaft. Where conditions warrant, these motors can be provided in the totally enclosed fan cooled type, although ordinarily such construction is not required.

As mills continue to expand and new and larger units are placed in operation, switching becomes a very important item. Breakers must have larger interrupting capacities. New breakers must be installed or breaker capacities increased. A very important development in this field is the Deion grid applied to the contacts of an oil circuit-breaker. The use of these grids permits obtaining the most effective use of the switch oil, since they reduce the arc period and energy and eliminate oil throwing. They can be applied to old

Fig. 7—Electronic generator voltage regulator.

breakers at approximately one-fourth the cost of new equipment, giving old breakers the characteristics of new equipment. Older switching equipment can be modernized at a very low cost.

Another recent development in industrial 2,000-volt motor control is the cubical type of construction—characterized by dead front panels with suitable breakers, relaying and metering equipment being completely enclosed in a metal cabinet with doors for access to both the low voltage wiring and to the high voltage breaker parts (Fig. 6). This type of construction enables a complete factory assembled and factory tested unit to be installed in a minimum of time and with a minimum of floor space. As such units are completely enclosed with dead front panels, they afford the maximum degree of safety to the operators.

Micarta, a Westinghouse laminated phenolic product, has recently found many important applications in the paper industry. It is impervious to weak acid, alkalis and pulp solutions. It has great mechanical strength, is uniform in structure and is long wearing. Having these useful properties, it makes an ideal material for doctor blades, water lubricated bearings, table roll coverings, toe blocks, and tank linings, and is being extensively used for these purposes. These applications are merely indicative of the many possibilities in this field.

Electronic tubes are playing a more important roll in the industry each year. For the past several years tubes have been used as paper break indicators and recorders, operation counters, and smoke recorders. Recently electronic tubes have been applied as voltage regulators (Fig. 7). They make a very sensitive and quick-response regulator, which is also applicable as an essential element of an accurate speed regulator for paper machine drives. Considerable development work has been carried on with an opacity meter which is designed to measure by photo-electric means the opacity of a sheet of paper and also with a color matcher. Both of these devices have a wide field of application in the industry. No doubt this important electrical device, the electron tube, will find many future applications in control and regulation problems.

The pulp and paper industry has always shown a willingness to co-operate with the manufacturers of electrical equipment in developing suitable apparatus for their needs. This has undoubtedly resulted in mutual benefit to both industries. No doubt the future development of the pulp and paper industry holds many other problems and with a continuation of the splendid co-operation of the past, these will find a satisfactory solution.

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◆ Idle Texas Mill to be Modernized

The Yellow Pine Paper Company, Orange, Texas, which has been idle for some months, has been taken over by a newly organized company known as the Commercial Pulp and Paper Company.

It is planned to start on the reconstruction of the plant about March 1, and have it ready for operation about June 1. It is expected the expenditure in reconstructing the plant will run from $100,000 to $125,000 and will include the installation of a considerable amount of new machinery. The modernized plant will be devoted to the manufacture of machine-finished book paper, supercalendered book and tissue papers, with a capacity of 80 tons of pulp and 35 tons of paper daily. New incinerators, with new disc evaporators and waxing machinery will be installed.

Sumner M. Bump, formerly captain of U. S. army engineers, will be the resident manager. C. A. Keiren, who will be engineer and superintendent, has been connected with a number of well-known Wisconsin paper mills.

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◆ A FURTHER consolidation of the resources and facilities of the Babcock & Wilcox Co., New York, and the Fuller Lehigh Co., Fullerton, Pa., became effective January 1. The sales offices of the companies have been combined and all business heretofore carried on separately or jointly will be done in the name of The Babcock & Wilcox Co. through its district sales offices. It is felt this consolidation will result in a better and more efficient sales service to the customers of both organizations.

PRACTICAL HELPS for the Mill Man

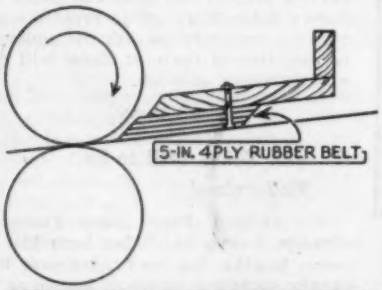
◆ Reducing Wear on Board Felts

The felt cost in a number of high speed board mills is usually high due to the excessive wear on the inside of the top felt.

This wear is caused mostly by the slices back of the first press, baby rolls, and wringer rolls. Mills using the wood slice find it necessary to pull the slice down very hard to keep the top felt from picking. This causes excessive wear on the felt and also causes the sheet to check in a number of cases.

A helpful hint is shown here to eliminate most of this trouble.

A piece of five-inch four-ply rubber belt is bolted to the wood slice with



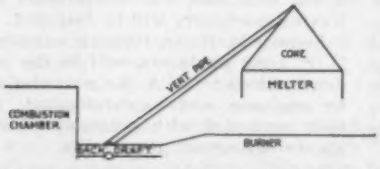
3/16-inch brass bolts, the belt extending beyond the nose of wood one inch.

The heel or back of slice is raised off the felt one to one and one-half inches.

Several mills have lowered their felt cost considerably by using this type of slice.

◆ Recovering Sulphur

In the acid department of a pulp mill, there is always a very unpleasant odor from the sulphur melter and considerable waste. As this odor is really only



the dust from the sulphur, this can all be saved by the following method:

Build a cone for the top of the melter, leaving the top open. From this opening run a pipe line direct to the back draft on the burner. The suction will draw off all odor. The material can be made by any tinsmith and the sketch gives an idea how it will look.

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◆ THE HOME OFFICES of the Seaman Paper Company in Chicago were moved on December 21 from 411 W. Ontario Street to 410 N. Michigan Ave.

◆ New Glaswick Oil Cup

A new type of wick oil cup is being marketed by The Lunkenheimer Company, Cincinnati, Ohio. It is called the

Glaswick oil cup and provides the advantages of automatic lubrication, visibility of oil supply, maintenance of constant oil level with consequent uniform feed, and ease in replenishing the oil supply.

The cup has a capacity of approximately 4 ounces of oil. It consists of a steel cup with a shut-off cock in the shank, and a glass bottle which fits over the top of the cup. The bottle is held securely to the cup by means of a steel wire and clamp. Tight closure between glass bottle and steel cup excludes dirt.

The desired rate of feed is obtained by determining the number of strands of wick to be used, and the oil then feeds at a uniform rate; the cup needs no further adjustment. The cock in the shank permits shutting off the flow when the bearings are idle, making it unnecessary to remove the wicks to stop the feed. Booklet F-532, containing complete information and list prices, will be sent upon request.

◆ G. E. Announces New Gasket Material

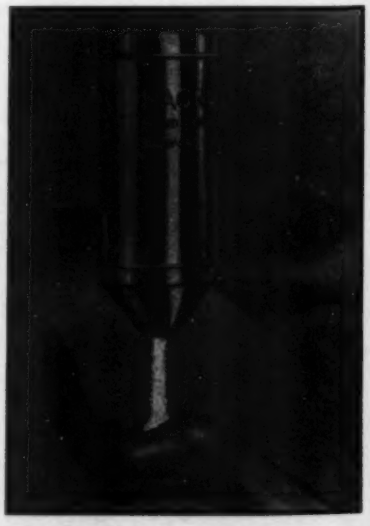
A new gasket material, moisture-proof, and highly oil-resistant, has been announced for sale by the General Electric Company. This material, known as No. 1000 Compound, is recommended especially for applications where the primary purpose of the gasket is to exclude moisture, for which purpose it has been found superior to cork or other rubber compounds.

It is a white, odorless, sulphur-free rubber compound, available both in sheets and moulded shapes. It is extremely tough and strong, very flexible, requires no sticker, and can be used repeatedly in testing work, as well as in permanent joints. It is unaffected by exposure to the weather, and when under compression in properly-made joints is not attacked by cold oil. In contact with hot oil it is practically unaffected where enclosed in recessed joints under compression, but is not generally recommended where resistance to hot oil is of prime importance. Mildly alkaline solutions, such as derived from Portland cement, or dilute acid solutions have no apparent effect on this material.

This material has been found especially useful in making joints in porcelain and metal assemblies, such as in dry-type bushings for outdoor transformers and oil circuit breakers. It is used effectively, also, in terminal potheads for lead-covered cables. It has been used also for subway transformers, covers of switchgear, factory treating tanks, factory testing of transformer radiators, and sealing of gas-filled machinery.

◆ Dispenser for Hand Cleaner

The importance of getting just the right amount of cleansing material for washing hands is believed to be satis-



factorily met by a new type of dispenser put out by the Mangus Chemical Company, Garwood, N. J.

This new type dispenser measures out into the hand, the right amount of cleanser to use, with each push of the sturdy spring plunger. Cadmium plated and rustproof, the dispenser is designed to stand long usage.

The top fits on tightly, yet is easily removable for reloading the dispenser. The strong spring on the plunger insures there being no leakage.

Effect of the New Welding Code on Process Industries and the

Importance of Its Proper Application

By F. G. SHERBONDY
Member of American Welding Society
Vice President of The Biggs Boiler Works Co.

THE advance that has taken place in the art of fusion welding in the last few years has probably never been paralleled by a similar development so materially affecting recognized and accepted practices of long standing.

The universal approval that has been accorded electrically welded construction, after what may seem a relatively short period of research and development is, I feel, chiefly due to three major conditions:

First—There has been, for a long time, a genuine need for a method of constructing various types of retorts, vessels, etc., used by the process industries of a superior nature to the type commercially available, and consequently the advantages of electrically welded construction were readily recognized and received by industries in general as a means of effectively and more economically carrying out many advanced processing requirements.

Second—The thoroughness with which various fabricators of special steel and alloy plate construction attacked the problem of working out individual welding procedures which would control, within close limits, the many variables encountered, with the object of producing welded joints of a predetermined uniformity and definite strength.

Third—The co-operation of various organizations, such as insurance companies, societies and committees interested in the project and the painstaking and laborious task of unifying the many and various methods of welding employed by the individual manufacturers into a universal code to be accepted and approved by the various interests.

Rules for the construction of unfired pressure vessels as adopted by the A. S. M. E. Code Committee on July 7, 1931, places the stamp of approval of the highest engineering authorities on welded construction and effects a universal recognition of this method without commercial limitations.

It is to be expected that the 1931 code, permitting as it does, the construction without limitation, of any type of pressure vessel may present problems of classification and/or interpretation that is not always understood by the management of industries in general; and likewise, it being the result of research and data supplied from so many different sources, may contain conditions, which when combined under a uniform procedure are likely to be misunderstood and misapplied.

To the industrial engineer, preparing specifications for the construction of welded vessels, as well as to the management of industry in general, I should like to point to a feature that is of paramount importance, namely, that the classification of the accepted methods of welding in the 1931 code, under Classes 1, 2 and 3, is to be considered solely as "A method of describing the recognized and accepted practices for welded construction" and not as a means of qualifying or grading respective types or methods of welding as to their superiority one over the other.

For example: Certain definite types of vessels, or to be more exact, vessels of certain dimensions and for certain working conditions and pressures, are to be be built under Class 1; certain other types of vessels are to be built in conformity with Class 2, and certain other types are to be built in conformity with Class 3 welding. These various classifications are the result of several years of painstaking research, countless tests and a collection of countless volumes of data covering the entire subject of welded vessel construction, and from such efforts the classification referred to has developed, with the result that each class is distinctly within itself and is the recognized and accepted standard of construction for vessels of the type which fall into the respective classes.

There may exist a tendency, by some engineers who are responsible for the successful operation of various individual processing units, to place a capital burden on the management by not thoroughly analyzing the full meaning of the new code, and by arbitrarily specifying a type of construction, entirely unnecessary for the particular type of vessels under consideration, feeling that in doing so they have "played safe" and relieved themselves of any individual responsibility. This theory, fortunately is not often encountered, especially when dealing with engineers who are thoroughly conversant with welded construction and the details of code requirements.

There does exist, however, in the mind of an occasional engineer, the feeling that in order to be on the safe side, he must specify Class 1 construction, irrespective of conditions of service his individual unit is to operate under, whereas, as a matter of fact, Class 2 or possibly Class 3 construction would in all probability give him a higher degree of safety than he has ever enjoyed before on similar plant apparatus.

It is needless to say that such a policy is economically wrong and such an engineer is not being fair with his management or to his profession.

The Much Discussed Subject of Stress Relieving

I doubt if any one subject that the code committee has had to consider was the subject of more discussion than this one particular phase of the specifications. Space will not permit details with reference to the various arguments pro and con on the subject, but perhaps it is sufficient to say that if a theory exists that stress relieving is a "cure-all" for all welding ills, the feature is very much over-rated and its benefits are very much misunderstood. Stress relieving, like many other requirements of the specifications is to be recognized, or perhaps to be more exact, the construction of vessels that are free from measurable or objectionable stresses, is a very important factor, comparable ductility, uniformity and strength. However, the specifications applying to stress relieving for Class 1 vessels, as well as their application, to a limited extent, to Class 2 vessels, is the result of a compromise from the original thoughts on the subject, the compromise being largely effected by the favorable experience records of the products of certain welding procedures, wherein thermal stress relieving was not employed.

Thermal stress relieving, as required by the code, does not, nor was its function ever intended to improve the tensile strength, ductility or soundness of the weld. Its application in the code is due largely to a broad interpretation of welding, on account of the fact that individual ability or procedures cannot be recognized. Stress relieving on vessels of extremely heavy wall thickness, however, is undoubtedly a good practice, if not an essential requirement.

It has, however, been the experience of our company and many others that on vessels constructed of plates up to 1½ inch in thickness, that thermal stress relieving is unnecessary and is regarded as an economic waste and this contention is shared by leading insurance companies who have had a background of several years' experience with vessels built under such welding procedures. On the other hand, it is possible that other welding procedures may lock up stresses that must be thermally relieved, so the rules adopted by the code committee are entirely justifiable but in no case should thermal stress relieving be considered necessary in the

production of welded vessels beyond the code requirements, or if employed, such vessels should not be considered superior to vessels constructed under a procedure wherein the procedure itself is so controlled that measurable stresses are not originally set up.

It should be the object of every manufacturer of welded pressure vessels to protect his investment as well as the position that has been accorded welded construction, by constantly demanding the full and complete observance of the fundamentals of good welding, and it should likewise be the duty of industries in purchasing welded equipment to inquire into the individual ability of the manufacturer, his experience and record of performance, and the buyer should further earnestly consider the type of service in which the vessels under consideration are to be used and be guided by the proper interpretation of the A. S. M. E. code as to specifications.

Our company has been manufacturing welded high pressure vessels for several years for the various process industries and the continuous and satisfactory operation of such units prompts me to say that, notwithstanding the strides that have already been made in welded construction, it is still in its infancy, but it is essential that the construction must not be unduly handicapped by improper application of fundamentals.

Electrically welded construction has definitely proven to be superior to other types of construction and while in some instances welded vessels may prove to be slightly lower in initial cost, due to the saving of material involved, I think this is entirely the wrong attitude to hold with respect to this class of construction. The saving to be effected due to decreased maintenance, general utility, prevention of loss in production, due to repairs, certainly favors welded construction as to ultimate cost, irrespective of its initial or first cost.

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◆ Ross Equipment for Champion Fibre Company

For its mill at Canton, N. C., the Champion Fibre Company is making some extensive additions to its equipment in order to insure the continuation of the policy of this company to make only paper of the highest quality. The J. O. Ross Engineering Corporation is furnishing a complete heating and ventilating system to be used in conjunction with the operation of the 242-inch machine that will make book paper. The production is given as 150 tons in twenty-four hours.

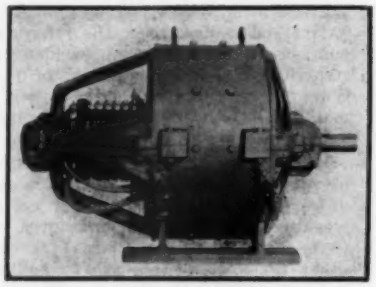
The new heating and ventilating system has been designed to provide for the future addition of air filters and this feature of the design is significant, inasmuch as it indicates the careful consideration being given by the company to the protection of the quality of its product.

The Ross organization is also furnishing a hood for the book paper machine and a complete fan exhaust system. The hood will be of the Ross removable panel construction that affords easy access to all parts of the machine without interfering with its normal operation at any time, and with the installation of this equipment, the Champion Fibre Company will be in a better position than ever to meet the demand for high quality book paper.

◆ Reliance Adds Larger Motors to D. C. Series

Larger motors for its Type T direct-current line have been announced by the Reliance Electric & Engineering Co., 1088 Ivanhoe Road, Cleveland, Ohio. The new motors range in size from 100 hp. at 800 r.p.m. to 350 hp. at 1200 r.p.m.

An unusual procedure was followed in their design. Thirty-four engineers



responsible for the care and operation of motors in some of the country's largest plants were shown the tentative plan. They made recommendations for improvement, based upon their years of practical experience with all types and makes of motors. Their ideas were incorporated to make these new motors superior power units.

The motors may be supplied for constant-speed or adjustable-speed service with a range of 2 to 1 or 3 to 1.

◆ Charles Forrest Moore

Charles Forrest Moore, at one time editor of *Paper*, passed away January 8 at Lewisburg, W. Va., aged sixty-nine.

Judge Moore was born at Huntsville, Va., where he received his early education. He attended Vanderbilt University and the University of Virginia, and practiced law at Huntsville and Clifton Forge. He was elected County Judge, from which office he resigned to become chief counsel of the West Virginia Pulp and Paper Company. In 1902 he went to New York City to become associated with the magazine *Paper*. Judge Moore was also the author of a number of books.

Judge Moore had been a regular attendant at the annual dinners of the American Paper and Pulp Association for nearly thirty years. Although confined to his home by paralysis for the past ten years, he had attended the dinner meetings of the association on several occasions during that time. He made his last visit at the meeting in 1930, and delivered an impressive address from his invalid chair at the association banquet.

Judge Moore had been married twice, and is survived by two daughters.

◆ New Catalogues and Publications

DeLaval Steam Turbine Co., Trenton, N. J.—Complete descriptive data of its Balanced Single Suction Series Pump has been published in Catalog B-3. There are illustrations of these pumps in various installations, and a page showing all internal parts, as well as a descriptive cross sectional drawing.

Hercules Powder Co., Wilmington, Del.—By way of announcing the completion of its new research and experiment station, this company has issued a special booklet which is indeed a work of art. There are thirty-four pages of splendid illustrations picturing everything of interest about the station from a fine aerial view through the various buildings and close-up views in the laboratory. The laboratories were designed and constructed under the supervision of the company's technical department.

Metropolitan Life Ins. Co., New York City—Important among recent literature put out by the Policyholders' Service Bureau is a new Index of Economic Reports, which lists the titles of approximately 500 reports and articles published by the Bureau. More than 100 new studies have been added since the previous edition. Another booklet is entitled How Exhibitors are Meeting the Trade Show Problem. Realizing the trade show must be brought into line with changed conditions, a survey has just been completed, and this report describes the control methods that have been found to be adopted in the different industries.

Noble & Wood Machine Co., Hoosick Falls, N. Y.—A new publication, which will be issued periodically and mailed to pulp and paper mill executives by this company, is called The Agitator. It will carry news of the industry and new developments of interest, notes on trade conditions and first hand information about the company's new equipment. Copy of the first issue has just been received.

Permutit Co., New York City—A new booklet has just been published, entitled Hot Lime Soda Water Softening. It is profusely illustrated with photographs and diagrams and contains tabulated data, conversion factors, methods of calculating chemical charges and reactions. Copies on request.

Williams Apparatus Company, Watertown, N. Y.—A new catalogue of apparatus for pulp and paper testing, designed by F. M. Williams, president of the company, describes and illustrates freeness testers and equipment for gas analysis besides several new developments in this company's testing machinery. Among these are the masterpiece model sheet making outfit for handmade sheets, two sizes of oil hydraulic presses, a heavy duty disintegrator and a stainless steel jar mill. Illustrations and concise particulars are given to make clear to laboratory workers the methods of operating, as well as the results obtained with the apparatus.

BOOKS

National Industrial Conference Board, Inc., 247 Park Avenue, New York, has issued, under the title *Unemployment Benefits and Insurance* a useful study of that form of relief plan which is related to insurance, voluntary and compulsive. Following an introduction, in which a study of the problem is set forth, a survey is given of foreign systems of unemployment relief and the conclusion is reached that the hazard of unemployment is largely uninsurable. In a preface by Mangus W. Alexander, president of the National Industrial Conference Board, an outline is given of the scope of the book which, to state it briefly, is an analysis of the experience of foreign countries with unemployment benefits and insurance, with a view of evaluating proposals of legislation that are now advocated for unemployment relief in the United States. The book is priced at $2.

MICHIGAN

◆ Sutherland Entertains Kalamazoo Section of Tappi

The regular December meeting of the Kalamazoo Section of Tappi was held in the laboratory of the Sutherland Paper Company, and was attended by representatives of most of the mills in the Kalamazoo valley. Among general business matters to be considered was a decision to forward to Secretary Macdonald a copy of the minutes of each meeting, that the national association might have a better insight into the activities of the Section.

The Committee on Testing of Raw Materials made a report and outlined a procedure which they propose to follow in the making of pulp tests, with the object in view of setting up standards for use in purchasing pulp. A questionnaire was given out to determine what equipment was available in the various mills for making comparative tests. It is the desire of this committee to get as many mills as possible working on the tests.

W. A. Crawford, general superintendent of the Sutherland Paper Company and president of the Michigan Division of the Superintendents' Association, was the speaker of the evening. "Compensating Felt Costs with Production" was Mr. Crawford's subject. He dwelt on the point that too often mills figure only the tons of good paper made on a felt and do not take into consideration the tons of poor paper made. A felt having a low initial cost may show up very good on the cost per ton of good paper made, providing the tons of broke made before a good sheet goes over the machine and the hours spent in frequent wash-ups are forgotten. The speaker stated that the number of days or weeks that a felt has run means absolutely nothing to him as such, nor does he care about the number of tons of good paper made on the felt. What he wants to know is the number of tons of broke made, due to the inefficiency of the felt. The fewer these are the better.

◆ AT THE REGULAR December meeting of the Michigan Division of the American Pulp and Paper Mill Superintendents' Association, E. Peterson, of the Goodrich Rubber Co., of Akron, Ohio, gave a very interesting talk on "New Developments in Rubber for Paper Mill Use." Mr. Peterson touched largely upon the covering of press rolls with rubber and illustrated the main points of his address with stereopticon slides. The Goodrich company has engaged in considerable research work in the development of its Vulcalok process which gives a firm adhesion of the rubber to metal and allows a good control of hardness in the finished surface.

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◆ PAPERS incorporating the American Paper Machinery and Engineering Works, Glens Falls, N. Y., were filed December 16, 1931, with the department of state. The company is capitalized at $60,000. H. D. Wells, V. H. Wells and H. G. Rhode are the principal stockholders and directors.

◆ Felix Pagenstecher Named President of Hawley Co.

Felix Pagenstecher, for the past eleven years president of the Bryant Paper Co., Kalamazoo, Mich., has been named president of the Hawley Pulp & Paper Co., Oregon City, Ore., effective January 1, 1932.

Mr. Pagenstecher has a successful record in the paper industry extending over a period of more than twenty-five years. One of his earliest positions was with the Riverview Coated Paper Co., Riverview, Ill., then managed by his father. In 1902 the company moved to Kalamazoo and following its reorganization he became manager. This company later was consolidated with the Kalamazoo Paper Co. of which he became secretary and executive in charge of sales. In 1919 he became assistant to President Frank H. Milham of the Bryant Paper Co., and two years later, upon the death of Mr. Milham, succeeded him as president. Under Mr. Pagenstecher's administration the Bryant plant has been remodeled and thoroughly modernized.

Mr. Pagenstecher has served as vice president of the American Paper and Pulp Association, is at present an official of other trade associations, as well as a member of the directorate of several banks.

◆ Robert H. Morse Heads Fairbanks-Morse

Robert H. Morse, formerly vice chairman of the board of directors, has been elected president and general manager of Fairbanks, Morse & Co., Chicago, to succeed W. S. Hovey, who resigned December 1.

As a youth, Mr. Morse entered the employ of the company thirty-six years ago and has worked up through the organization, and now becomes president of the company founded by his father.

◆ Ernest H. Neblett

Ernest H. Neblett, chairman of the southeastern division American Pulp and Paper Mill Superintendents' Association, and an authority on blotting and absorbent papers, died at his home in Richmond, Va., December 6, 1931.

Mr. Neblett entered paper manufacturing upon leaving school, as an apprentice, with Dill & Collins, and later became associated with the District of Columbia Paper Manufacturing Company. When the Standard Paper Manufacturing Company began operations in 1902, he returned to his home city and became backtender under Superintendent W. J. Stiles. In 1920 he was promoted to superintendent of Mill No. 1 and specialized on blotting and absorbent papers. In 1930 Mill No. 2 was added to his supervision. Mr. Neblett enjoyed a wide acquaintance, both among the mill men and in Richmond. He is survived by his wife, three sons, one daughter, one brother and one sister. His eldest son, Ernest Ryland Neblett, has been his father's chief assistant for several years

◆ Alonzo Aldrich

Alonzo Aldrich, for forty-two years president of the Beloit Iron Works, Beloit, Wis., and one of the outstanding figures in the development of papermaking machinery, passed away at Cleveland, Ohio, December 20. Mr. Aldrich was seventy-three years of age.

Although president of the company until the time of his death, Mr. Aldrich had not been active in the business for some time, the management of the company having been directed by Elbert H. Neese, vice president and treasurer.

Mr. Aldrich was very well known in the industry as the originator of some of the most important developments in recent high speed papermaking machines. Many patents have been issued to him for devices which have been of value to paper manufacturers.

Mr. Aldrich was loyal in the extreme to the men of the Beloit Iron Works. He knew the employees in the relationship of fellow workmen and he was always interested in their problems and anxious to assist them in their difficulties. He was prominent and generous in civic movements and had contributed substantially to research work.

Surviving Mr. Aldrich are one sister, Mrs. James Lamb, Pasadena, Calif., and a daughter, Mrs. E. H. Neese.

◆ L. J. Dorenfeldt

Lauritz Jenssen Dorenfeldt, an internationally known mechanical and chemical engineer, of Oslo, Norway, died in that city on Sunday, January 3, in the sixty-ninth year of his age. He had many friends and acquaintances in the United States and Canada, it having been his custom since 1888 to make periodical visits to this country. He was born to the Jenssen family in Ranheim, Norway, January 23, 1863, being a brother of J. D. Jenssen of sulphite tower fame. The change of name was effected in his early manhood.

Mr. Dorenfeldt was educated, first as a mechanical engineer at Trondhjem Technical College, Norway, from which he was graduated in 1884, and later as a chemical engineer at the Technical High School, Berlin. He was associated with the late Dr. Viggo Drewsen in the development of pyrites burners. At the same time he and Doctor Drewsen went intensively into the study of sulphite acid manufacture and recovery.

Mr. Dorenfeldt married a Miss Boedker, a relative of Mrs. Viggo Drewsen, who was also a cousin of Mr. Dorenfeldt. He is survived by his wife and three married daughters, as well as by a son who is attending college in Oslo.

◆ James L. Coker

James L. Coker, president of the Carolina Fiber Company, Hartsville, S. C., died on Wednesday, December 23, aged sixty-eight years.

Mr. Coker was a pioneer in the southern paper industry. He was said to be the first to manufacture paper by a

semi-chemical process from yellow pine. His connection with the paper industry dated from 1889. He held patents covering the manufacture of sulphite acid liquor, digester lining, wood conditioning and low-head pumping.

Mr. Coker was the eldest son of Major James L. Coker, founder of Coker College, Hartsville. He was a graduate of Richmond College and the Stevens Institute of Technology, where he received his degree of M.E. He is survived by two sons and a daughter.

◆ THE AMERICAN Paper Machinery and Engineering Works, Glens Falls, N. Y., was granted patent on its Proportioning and Metering System on December 1, 1931. The U. S. Patent Office allowed 14 claims. Patents have been applied for in Canada and foreign patents are pending.

St. Croix Installs New Steam Generator

THE St. Croix Paper Company has recently installed a very compact and efficient steam generator at the Woodland, Maine, power plant. This steam generating unit is rated at 740 nominal horsepower and operates at a working pressure of 450 lbs. per sq. in. Feed water is received at a temperature of 200 deg. Fahr. and is heated by the 3120 sq. ft. extended surface economizer to a temperature of 302 deg. Maximum rating is 95,000 lbs. of steam per hour and the average overall efficiency is in excess of 85 per cent.

The unit is fired by pulverized coal. Fuel is prepared by two Aero impact type pulverizers which discharge to turbulent burners in the front wall of the water cooled furnace. The pulverizers are equipped with magnetic separators for removal of tramp iron and are fed by rotating table type feeders. The feeders are driven by variable speed motors, inter-connected with the boiler control equipment, making the operation of the pulverizers practically automatic. The pulverizers receive preheated air at the feed end. This air is used for mill drying of coal and effects a considerable saving in power costs.

The furnace of the steam generator has water cooled walls on both sides and in the rear. It is also fitted with a water cooled arch, providing a total waterwall coverage of 1024 sq. ft. The two side walls and the arch are of the tile back construction, made up of closely spaced tubes, backed by specially shaped tile. The rear wall is of the standard wing-back construction consisting of water tubes to which are bolted wing-back castings to provide a continuous metallic surface over the entire wall.

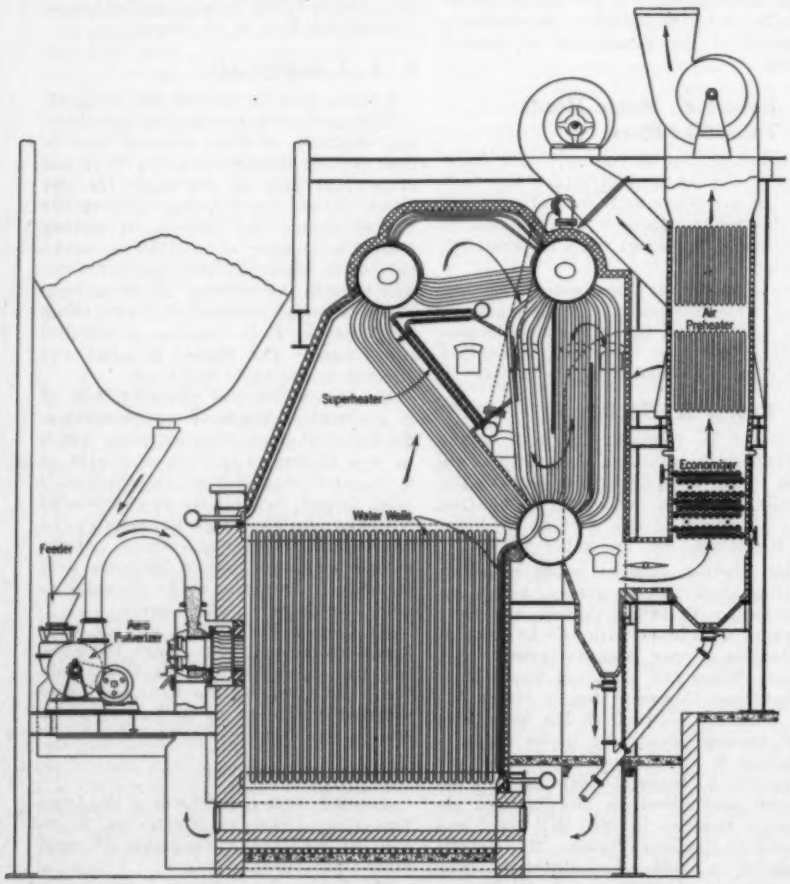

Diagram of steam generator installed at the Woodland, Maine, power plant of St. Croix Paper Co.

The boilers are of the three-drum bent tube type, containing 7400 sq. ft. of heating surface and are arranged for four passages of gas flow through the tubes.

A convection superheater is placed behind the front bank of water tubes. The superheater is designed to give 270 deg. superheat at a rating of 90,000 lbs. of steam per hour. At the working pressure of 450 lbs. per sq. in., this is equivalent to a final steam temperature of approximately 723 deg. Fahr. The superheater is composed of two headers, connected by extended surface elements. The elements are made up of seamless steel tubes with accurately bored cast iron rings shrunk on them. This construction permits installing a large amount of surface with a minimum number of expanded joints in a small space. This superheater has no water pockets, and can be completely drained.

Flue gases leave the boiler at the bottom of the fourth pass and enter the economizer at a temperature of 850 deg. at the higher ratings. The gases pass upward through the economizer counter current to the water, which flows downward, and leave the economizer at a temperature of 573 deg. Fahr. This flow arrangement is a patented feature which is made possible by a positive circulation of water in the tubes. The extended surface construction of the economizer elements protects the steel tubes against the corrosive action of the gases and tends to compensate for the difference in heat transfer rates of gas and water.

From the economizer, flue gases flow upward through the sectional plate type air heater which is made up of four interchangeable sections. The sections are arranged in two groups of two sections each. Flue gases flowing upward through the groups and the air to be heated flowing downward. An induced draft fan placed above the air heater provides draft for the flue gases. The pressure loss in the air flowing through the heater is overcome by a forced draft fan placed above the boiler. At the higher ratings air for combustion is heated to a temperature of 361 deg. Fahr. and the flue gases are cooled to 348 deg. Fahr. At the lower ratings the air is heated to a temperature considerably above the temperature of gases leaving the air heater.

This steam generator was installed to supplement existing electric-steam boilers in the plant and was furnished complete by the Foster Wheeler Corporation. The Foster Wheeler Corporation purchased the boiler used in this installation from the Wickes Boiler Company, Saginaw, Mich. Mr. George F. Hardy of New York acted as consulting engineer in an advisory capacity for the St. Croix Paper Company.

The MONTH at WASHINGTON

CONGRESS—The Senate agreed to a resolution (S. Res. 95) directing an investigation by the Tariff Commission into the effect of the depreciation in value of foreign currency on the importation of mechanically ground wood pulp, chemical wood pulp, unbleached or bleached, and pulpwoods, a resolution sponsored by Senator McNary of Oregon, and the Tariff Commission immediately instituted such an investigation.

The Banking and Currency Committee of the House and the subcommittee of the Senate Banking and Currency Committee, have been busy holding hearings on the proposed establishment of the Reconstruction Finance Corporation proposed by President Hoover in his message to Congress, and on the Walcott bill (S. 1), and the Strong bill (H.R. 49). Such a federal agency for emergency credit is being almost unanimously favored by those heard by the committees to date, as a plan which is one thing which can do most to reassure the public and remove fear. A higher price level for commodities and securities might result from such activities, it is pointed out. The main value of the corporation will lie in the availability of funds if needed. This agency will also fit into the Nation's economic structure to render financial aid in places and directions which the National Credit Corporation and the Federal Reserve System are unable to reach.

The new revenue bill is expected to reach the House sometime this month for action, following hearings being held by the House Ways and Means Committee now in progress, to meet the $2,100,000,000 expected deficit in the Treasury.

The Senate Committee on Manufactures is continuing its hearings on the proposed creation of a National Economic Council to solve economic problems in the United States, the rationing of business output to stabilize large and small industries and enable them to maintain payrolls, and changes in the anti-trust laws to enable business leaders to know what they can do legally, obtaining more accurate employment and earning statistics, etc.

The enactment by Congress of legislation to improve the operation of the bankruptcy laws was recommended by the Attorney-General in his annual report to Congress, suggesting corrective legislation with reference to criminal procedure in the Federal Courts, present delays which are permitted to follow verdicts of guilty, and expediting the work generally. An accused person, wishing to plead guilty, should be permitted to do so and sentenced immediately, without being required under the present law, to go through needless and expensive grand jury proceedings and indictments.

Forecasting a gross postal deficit of about $200,000,000 for the current fiscal year, the Postmaster General, in his annual report to Congress urged a proposal to increase the rate on nonlocal letter mail to 3 cents, pending the return of normal business conditions, and thereafter a 2½c increase.

An amendment to its organic act to "put beyond question" the authority of the Federal Trade Commission to make investigations in aid of legislation, is suggested to Congress in the annual report of that Commission, and provisions for investigation of alleged violations of the anti-trust laws.

Authorization would be given the President to appoint representatives with authority to take part in any international conference to make agreements with respect to tariff rates, under a bill introduced by Congressman McClintic of Oklahoma, and which would stop the wild race of all countries to see who can put up the highest tariff walls.

The Business Situation—The rise of the price of silver is considered in some quarters as indicating a turn in the trend of world business, says the Department of Commerce. Reports also show some improvement in British trade and production since the suspension of the gold standard, while Canadian trade continues to show a slight but steady improvement.

Tariff Commission—The President approved 17 reports of the Tariff Commission, 5 showing decreases, 2 increases, and the others not changing the rates. No change was made on lumber and timber of fir, spruce, pine, hemlock or larch, in which Canada is the principal foreign competitor.

The Tariff Commission has also submitted a 38-page mimeograph report on its investigation with respect to copper, pursuant to Senate Resolution 434, 71st Congress; and a 28-page mimeograph report on its investigation of crude petroleum and refined products, pursuant to House Resolution 391, 71st Congress.

Customs Protests—The U. S. Customs Bureau advises that in 1931 approximately 70,000 custom protests were filed with the various U. S. Customs Courts, disputing classifications made by the government examiners under the Tariff Act, at the rate of about 6,000 a month, coming from all sections of the country, covering practically every kind of importation.

Radio Broadcasting—Paid testimonials in advertisements which do not disclose that payment was made, are prohibited by the Federal Trade Commission, in an order which forbids a corporation to continue advertising its products by means of the paid endorsements of certain national celebrities. The Commission also endorsed the code of ethics adopted recently by the National Association of Broadcasters.

Paper for Money—More than 9,820,000 pounds of paper, especially prepared under the supervision of Government officials, were delivered to the Bureau of Engraving during the fiscal year 1931 for printing paper currency, Government bonds, checks and revenue and postage stamps. Internal revenue stamps for cigarettes and playing cards called for more paper than any other class of printing, using 5,248,696 pounds.

The distinctive paper used by the Federal Government for its money, stamps and checks is manufactured by contracting firms under the direction of Treasury officials to insure fulfillment of specifications and is received by the Paper Custody Division of the Public Debt Service, which dispenses it to the Bureau of Engraving and Printing.

Chinese Buy U. S. Paper—Chinese paper dealers are turning to the United States and Europe for their supplies as the result of the continued boycott activities in the Shanghai market. A determined effort on the part of German paper manufacturers to gain a foothold in the market has been noticeable.

Logging Operations—Seven methods of disposing of slash after logging operations in the Western yellow pine forests of the Pacific northwest, are described in Technical Bulletin No. 259-T, just issued by the Forest Service. The advantages and disadvantages of each method are discussed, with costs and results stated.

New Publications—A publication of intense interest recently released by the Department of Commerce is a 35-page mimeograph report, *Forging Ahead During Depression*, giving instances of business and industrial firms which have made material progress during the depression in maintaining or increasing sales volume or profits, and the policies or reasons for such progress, covering 358 examples from various parts of the country, covering 202 manufacturing industries, 43 retail distributors and 10 wholesalers, in 74 cities in 30 states.

Reprints in booklet form have been issued of Research Paper No. 352, Bureau of Standards, entitled *Accelerated Aging Test for Paper* by Royal H. Rasch, Research Associate of the Brown Co., Berlin, N. H. A series of Government bond and ledger papers was studied with reference to certain properties that appear to be related to permanence, and this paper outlines the findings from such tests.

Market for Paper and Paper Products in Cuba is the title of Trade Information Bulletin No. 782, recently released by the Bureau of Foreign and Domestic Commerce, showing Cuba one of the best markets in the Western Hemisphere for paper and paper manufactures, with annual imports up to $6,000,000, one-half of which comes from the United States, with Canada forging ahead as a competitor in recent years.

+ CANADIAN NEWS +

◆ $4 Cut in Newsprint Prices

Announcement was made early last month of a cut in the price of newsprint for 1932, amounting to $4 per ton in the northern zone, by International Paper Co. This was followed almost immediately by the announcement of a corresponding reduction by Canadian companies. This may have the effect of hastening or making more necessary the consolidation scheme now under consideration. In the case of this latest cut, however, it must be considered that it merely reduces a benefit which has accrued to the Canadian producers in recent months by virtue of the discount on the Canadian dollar and the fact that United States customers have been paying in United States funds.

For some weeks previous, representatives of the newsprint industry had been in conference on the question of a new price schedule for 1932. Great Northern Paper, one of the largest newsprint producers in the United States, was the first to announce, on November 28th, that it had reduced its price to $53 a ton delivered in New York, and this was followed in quick succession by the announcements of International Paper and the Canadian companies.

The price of newsprint has declined progressively since 1921, when the top price of $130 a ton, f.o.b. mill in Canada, was reached. The present price of $53 a ton in New York corresponds to less than $50 at the mill; so that in the past eleven years the price has dropped over $80 a ton.

◆ INTERNATIONAL Power and Paper Co. of Newfoundland, a division of International Paper and Power Co., for the third quarter of 1931 reports net revenue available for interest and reserves of $853,028, as compared with $765,588 in the third quarter of the previous year, an increase of eleven and one-half per cent. Balance added to surplus in the third quarter was $248,540, against $194,986 in 1930.

◆ JOHN P. SAWYER, formerly of the groundwood and sulphite departments of the Cornerbrook, Nfd., mill, has been appointed assistant manager of the International Paper mill in Webster, Me.

◆ SINCE regulations were put into effect by the Department of National Revenue respecting goods imported from the United States, the Canadian Pulp and Paper Association has received numerous complaints that exporters of paper, etc., were accepting Canadian funds in payment and depositing same in Canadian banks. The matter was taken up by the Association with the Department through the Association's tariff expert, and a ruling has been given out declaring that this practice constituted dumping within the meaning of the Customs Act when Canadian funds are at a discount relatively to the currency of the exporting country, and that consequently dumping duty should be applied in such cases.

◆ Operating Ratio Up in November

Canadian newsprint mills during the month of November operated at 56.8 per cent of rated capacity, which compares with 55.1 per cent in the preceding month, and with 67.6 per cent of capacity in the corresponding month in 1930. For the eleven-month period of 1931 ended with November the operating ratio of Canadian newsprint mills was 58 per cent of capacity, which contrasts with 70.3 per cent in the corresponding period of the preceding year.

Production of newsprint paper by the mills in this country during November amounted to 175,643 tons, as compared with 184,252 tons in the preceding months which contained more working days. During November, 1930, the output of newsprint by the mills in the Dominion amounted to 201,703 tons. Against an output of 175,643 tons in November, shipments of Canadian mills totalled 173,601 tons. In the same month, production in the United States amounted to 94,149 tons, and shipments to 93,723 tons.

During the eleven-month period of 1931 ended with November, total production by Canadian mills amounted to 2,033,121 tons, which was 286,247 tons less than in the first eleven months of 1930, a decrease of 12 per cent. The output in the United States for the same period was 10 per cent less than in the corresponding period of 1930. While the Canadian mills were operating at 56.8 per cent of capacity in November, the mills in the United States operated at 65.6 per cent and those of Newfoundland at 98.5 per cent of rated capacity.

◆ To Investigate Effects of Currency Depreciation

The Senate of the United States recently adopted a resolution directly aimed at our pulp and paper industry. The resolution provides for an investigation by the tariff commission of the influence of foreign currency depreciation upon importation of pulpwood and of pulp.

This move, sponsored by Senator McNary, Republican, Oregon, although inspired by the fact that the present discount of about 20 per cent on Canadian funds makes it virtually impossible for American producers to compete with the Dominion's industry in the United States market, is also seen as pointing to the development of an entirely new phase in the American tariff policy, since a similar problem exists in connection with all other imports from countries whose currencies are depreciated.

Another proposal of considerable interest to Canada is the exclusion of Russian pulpwood which will be urged before the Senate Finance Committee by Senator Dill, Democrat, Washington, who said he would lay his plea before the Committee when it considers the bill by Senator Jones, Republican, Washington, to levy a tariff on products from countries changing the monetary standards. The Russian pulp question, he said, should be included in the Jones measure, but if not, "appropriate provision should be made to shut off its flow."

◆ THE TECHNICAL and Woodlands Sections of the Canadian Pulp and Paper Association are investigating the losses of pulpwood through deterioration in block piles and in water storage. The investigation is being undertaken with a view to finding means of lessening the loss of wood through decay. It has been decided that the Forest Products Laboratories of Canada, which is co-operating, will conduct a survey of pulpwood in block piles and in water storage at several representative pulp and paper mills in Eastern Canada, to find out the approximate amount and the nature of wood decay, as related to the length of time in storage, storage conditions, kinds of wood, etc. Samples will be taken for pathological studies, as well as for small cooking tests. A suggestion to organize field experiments on the deterioration of sound pulpwood in experimental small piles under various conditions has been accepted. The work will require several years for its completion and will be conducted by the Dominion Bureau of Plant Pathology in co-operation with one of the pulp and paper companies in the membership of the Canadian Pulp and Paper Association.

◆ Canada to Benefit by British Tariff

The new duties of fifty per cent, designed to prevent dumping of foreign goods in Great Britain for unfair competition with home industry, is having its effect on the Canadian paper trade as indicated by the fact that a number of the Canadian mills have been receiving inquiries from Great Britain for prices and terms on shipments of fine grade papers, wrapping paper, etc.

Although the Canadian mills will find it difficult to compete with some of the foreign markets in most paper lines, yet there is a prospect of business in some paper lines developing from the British protective tariff, and some of the mills in this country are looking for some nice export business to the Old Country. The main paper item at present being exported from Canada and Newfoundland into Great Britain is newsprint; Scandinavia, however, has also been exporting some $13,000,000 of this commodity yearly, and Canadian mills are hoping to get a good share of this.

QUEBEC

◆ Action by Belgo Minority Shareholders Dismissed

A minority group of Belgo-Canadian Paper Co. shareholders, led by Michael A. Michaels, recently entered an action in the Superior Court at Montreal against the proposed arrangement between the company and its shareholders to take over stock in the newly-formed Consolidated Paper Corp. The contention was that the preferred shareholders of Belgo were not accorded adequate consideration in view of the value of their securities as compared with those of the other constituent or subsidiary companies of the old Canada Power and Paper Corp.

Mr. Justice Boyer has just rendered judgment dismissing the action. The two main grounds for dismissing it were: first, that the arrangement seemed to be fair, and, second, that it had already been approved by an overwhelming majority of the shareholders. In discussing the fairness of the scheme, His Lordship noted that it was in the nature of a compromise "to make the best of a bad mess."

The common shares of Consolidated Paper Corp., successor to Canada Power and Paper, have been admitted to trading in the unlisted section of the Montreal curb market on a "when, as and if issued" basis.

◆ DIRECTORS of Price Bros. & Co., Quebec, have declared the regular quarterly dividend on the preferred shares, but decided to omit the quarterly payment on the common shares of the company. The common dividend, formerly paid at an annual rate of 2 per cent or $2 per share, was reduced to $1 per share at the preceding dividend meeting held early last fall.

◆ Eddy Proceeding with Plant Renovation

C. V. Caesar, managing director of the E. B. Eddy Co., Ltd., Hull, has announced that with the completion of the initial unit, namely, the water purification and filtration plant, his company plans to proceed with the next unit of the $12,000,000 re-habilitation plan announced early last year. The second unit to be undertaken by the company embraces the rebuilding of the sulphite mill, a complete new wood room with the possible addition of new bleaching and other equipment.

At the present time detailed plans for the work are in course of preparation, and in this connection L. S. Dixon, construction manager of the company, has just completed an extensive tour of mills in Eastern Canada and the United States. Mr. Dixon expressed his appreciation of the courtesy extended him by the various mills in discussing their latest developments.

◆ GATINEAU Power Co., a part of Canadian Hydro-Electric Corp., has completed the installation of the seventh 34,000 hp. generator in its Paugan hydro-electric plant. With the addition of this unit Paugan has now an installed capacity of 238,000 hp. and ranks as one of the largest hydroelectric generating stations in North America. As the Paugan power house can house eight 34,000 hp. units, the installation of the present seventh unit involved only the cost of the machinery, resulting in comparatively low additional capital outlay per horse-power. The new addition raises to 472,500 hp. the aggregate installed capacity of the company's plants on the Gatineau River, and increases to 574,700 hp. the interconnected capacity of all its plants on the Ottawa and Gatineau rivers and tributaries. In addition, the company has 104,400 hp. in other hydro-electric plants, making a grand total of 679,100 hp.

◆ EXPLOSION of an acetylene tank in the Farmers Rapids plant of Gatineau Power Co. last month injured nine men and caused damage of $15,000 to plant equipment. Several of the injured men sustained severe burns and shocks, but all are expected to recover. Fortunately, none of the transmission lines were broken, and power was supplied to the city of Ottawa from the Chelsea plant while the necessary repairs were being carried out at the Farmers plant.

◆ NEGOTIATIONS which have been started with a view to forming a super-merger of Canadian newsprint producers contemplates inclusion of the mills of International Power and Paper, operating in Canada through Canadian International Paper and International Paper of New Brunswick, producing about 1,800 tons a day. Joseph L. Fearing, vice-president and general sales manager of the parent company has issued a statement to the effect that his company was favorable to the merger, but specifying that the conditions of the merger must be such as to ensure very substantial savings to prove its value to the industry, otherwise International will continue to paddle its own canoe.

ONTARIO

◆ Paper Parley Held

The Ontario Government is again turning its attention to the question of the newsprint mills in the province. Conferences were again held last month between the Government, represented by the following ministers: Hon. W. H. Price, Attorney-General; Hon. Charles McCrea, Minister of Mines, and Hon. William Finlayson, Minister of Lands and Forests, on the one hand, and executives of newsprint companies operating in the province, on the other. The object at which the Government is aiming in inaugurating these conferences is understood to be the reopening of mills that are at present closed down and the speeding-up of production in others that are operating on low schedules.

Abitibi is running its Sault Ste. Marie Division, having reopened it several weeks ago, after it had been closed for nearly a year; but operation of this plant was rendered possible only by some re-allocation of tonnage at the Iroquois Falls Division. There are five mills in Northern Ontario that are shut down, with resultant hardship to communities that look to the local newsprint mill as the main, or even sole, source of employment for the locality, while a number of others are only on part-time operation.

◆ W. B. CHRISTIE, superintendent of the Toronto plant of the Hinde and Dauche Paper Co. of Canada, Ltd., has resigned from that position, and R. M. Cook, plant engineer, has been appointed to succeed him.

◆ ALMOST complete renovation of the plant has taken place of late at the Don Valley Paper Co.'s premises in Toronto, and the work is now practically complete. The heating system of the mill has been all changed over and new switches and motors have been installed, according to Superintendent MacKenzie who has been supervising the work personally. All of the machines and the interior of the building have been overhauled and the power system improved.

◆ ON DECEMBER 17th Abitibi Power and Paper Co. deferred action on the quarterly dividend of $1.75 on the 7 per cent preferred stock due at this time. There are $1,000,000 of these shares outstanding, and the year's dividend requirements on them is only $70,000. In 1930, the company earned $267.67 per share on this particular issue.

◆ IT IS UNDERSTOOD that pulpwood activity in Northern Ontario has been resumed, and that the Spruce Falls Power and Paper Co., at Kapuskasing, has placed contracts with settlers in that district to cut 100,000 cords of pulpwood at an average price of $5.25 a cord. The company is also operating three camps of its own. It is stated that the Abitibi Power and Paper Co., in connection with its Smooth Rock Falls operations, will take out a large supply of pulpwood. The Spanish River Lumber Co., of Sudbury, also recently established two camps of 100 men each to take out logs for the coming winter.

◆ New Receivers Named for Backus Companies

In a reorganization last month of the receivership of the Minnesota and Ontario Paper Co., subsidiary of the Backus-Brooks Co. of Minneapolis, C. T. Jaffray, president of the Soo Line railways, and Richard H. M. Robinson, New York, were appointed as new receivers of the company. They succeed E. W. Backus, E. W. Decker and Charles R. Fowler, who were appointed as receivers last February when the company went into voluntary receivership. In a statement on behalf of both the new and old receiverships, it was explained that the change is the result of carefully worked out plans, following several months of work in auditing the company's books and surveying of its plants and other properties. Operation of the properties has been conducted through the original

receivership on a sound basis, according to the statement.

According to a dispatch from Fort William, the mill of the Great Lakes Paper Co., located in that town, is not affected by the reorganization. The Fort William mill is operating under receivership of the National Trust Co., receivers for the Great Lakes Paper Co., and is working a force of about 400 men on short time. No information is available as to the Fort Frances mill, which is affected by the re-organization, although the plant is said to be operating on a full-time basis and turning out 325 tons of newsprint daily.

NEW BRUNSWICK

◆ THE NEW BRUNSWICK Pulpwood Producers' Association has recently been organized to embrace all those engaged in the industry in New Brunswick who may wish to join. Problems of the shippers, particularly relating to freight rates, are to be taken up by the body. An effort is to be made immediately to try to secure a reduction in freight charges. Ewart C. Atkinson, M.L.A., Fredericton, has been elected president.

◆ THE FRASER Companies and the New Brunswick International Paper Co. are co-operating in the renewal of the boom on the main southwest Miramichi River next spring. All pulpwood operators, as well as the two major pulp and paper companies of the province, are eligible to use the boom. The assurance that the boom will be in use in the spring and early summer is expected to increase pulpwood operations on the upper river this winter.

◆ ACCORDING to J. Sutton Clark, of St. George, and to Mayor Blakney of Moncton, construction of the Chignecto Canal would increase the demand for the limestone found at or near the coast of the Bay of Fundy by pulp manufacturing companies located in Quebec and in Eastern Ontario.

NOVA SCOTIA

◆ THE NOVA SCOTIO Wood Pulp and Paper Co., operating an old established pulp mill at Charleston, has contracted with Arthur McLean for 1500 cords of pulpwood. Indications are that the whole cut will be made within a radius of about 35 miles of the mill. The Charleston mill will function steadily throughout the winter, most of the pulp being destined for the Scott Paper Co.'s mill at Chester, Penn. The latter has been supplied with Nova Scotia pulp for the past twenty years.

◆ Mersey Mill Operating at 100 Per Cent of Capacity

Officials of the Mersey Paper Co., Liverpool, N.S., recently announced that when the mill completed two full years of operations at the end of November last, a total of 138,489 tons of newsprint had been produced and shipped from the plant. As the mill, with two machines operating, has a rated capacity of 250 tons daily, these figures would indicate, allowing some little time for the machines to attain their full efficiency, that capacity operations have been maintained almost without interruption throughout the two-year period.

Another interesting announcement is that the company has built up a new market for its production in its recent invasion of the British West Indies. Shipments for this market, which go through New York, have not yet reached notable proportions, but it is hoped that, in time, it will prove well worth the efforts made in its development.

That the company has not established this record of production and shipments at the expense of profits is indicated by the fact that, for the first full year of operations, the 1930 period, bond interest was earned with a sufficient margin, after generous depreciation, to have paid full dividends on the preferred stock of the company, this in a year when the old line companies were being forced to omit preferred dividends and, in some cases, bond interest, due to serious contraction in earnings. It is also pointed out that these results were achieved despite extraordinary selling expenses involved in building up markets for the company's product among Nova Scotia publishers.

BRITISH COLUMBIA

◆ PRACTICALLY at the same time as eastern newsprint producers announced a reduction of $4 a ton in the price of their product, a reduction was also made by Pacific Coast mills. Contracts for newsprint are now being closed at a base price of $50, delivered at major Pacific Coast ports. The cut affects Powell River Co., operating a 650-ton mill at Powell River, and Pacific Mills, Canadian subsidiary of Crown-Zellerbach Corp., with mill at Ocean Falls of a rated capacity of 250 tons a day. The new price, which became effective January 1st, represents a drop of $8 a ton on the previous price of $58 established a year ago. Prior to that time the "going" coast price of newsprint had been $63.50. The present price, therefore, represents a drop of $13.50 in a year's time. It is understood that the $50 price is protected to the end of 1933, and that a price not to exceed $58 is guaranteed for 1934.

◆ THE BRITISH COLUMBIA Pulp and Paper Co., Ltd., Port Alice, has just established a very gratifying safety record. In 1929 for the six months June to November the company had a total of 21 accidents in the mill. For the same period in 1930, it had 15 accidents and for the same period of 1931 it had only 9 accidents. This unusually good record is attributable to the fine work of the safety committee.

◆ COAST mills are finding the Oriental market somewhat complicated by reason of the exchange situation. Suspension of the gold standard by Norway and Sweden has enabled Scandinavian pulp to be purchased 25 per cent cheaper in Japan than formerly. The Chinese boycott of Japanese goods has been extended to the pulp and paper field, with the result that there has been a congestion in the Japanese market and a general decline in demand. The boycott, however, has not been without its beneficial effect on the newsprint market in British Columbia, and orders for Pacific Coast newsprint picked up immediately after the outbreak of the Japanese-Chinese trouble, with the result that several substantial Chinese orders had to be filled on this side of the Pacific.

❖ ❖ ❖

◆ Joint Meeting of Tappi and Pulpwood Department

T. A. P. P. I. and the Pulpwood Department of the American Paper and Pulp Association are to have a joint meeting on Monday, February 15, at Hotel Pennsylvania. There will be a morning session, beginning at 10 o'clock, at which pulpwood evaluation will be discussed. The results of experiments in pulpwoods at the Forest Products Laboratory will be presented in concise and tabular form. The chemical and physical characteristics, cooking variations, and yields of pulp by processes as related to quality of pulp will all be discussed. Following this, methods of handling pulpwood will be discussed under four heads, each introduced by a separate speaker. The subjects will comprise transportation of woods to mill; loading and unloading; storage and handling in woodyard; woodroom organization and costs.

The morning session will close with papers and discussions on the integration of wood users to effect economies in pulpwood costs.

At the afternoon session, beginning at 2 o'clock, technical questions will be brought up for discussion. Thus under "Fibrous Materials for Papermaking in the Future," an attempt will be made to forecast fiber characteristic requirements in future paper needs and cheap sources of that fiber. The effect of kinds, sizes, and qualities of pulpwood upon pulp quality will be brought up and the subsequent treatment of pulp from inferior wood so as to bring it to the usual standard of quality, will be discussed. The grading of pulpwood with regard to the relation between cubic wood content of cord and f.o.b. mill costs will come in for attention and various grade indicators discussed. Pulp manufacturing costs with particular reference to wood and to regional differences will conclude the proceedings.

◆ THE U. S. TARIFF Commission announces the institution of an investigation pursuant to the provisions of Senate Resolution 95. This resolution, which was introduced by Senator McNary, states that the commission is directed to make a thorough investigation of the effect of the depreciation in value of foreign currencies upon the importation into the United States of mechanically ground woodpulp, chemical woodpulp, unbleached or bleached, and pulpwoods, and that the results shall be reported to the Senate as soon as practicable.

NORTHERN NEW YORK

◆ Utleys Sell Interest in Regal Paper Company

The interests of Fillmore G. Utley and his son, George S. Utley, in the Regal Paper Co., Inc., of Pulaski have been sold to a group headed by Richard Sweet of the Sweet Brothers Paper Manufacturing Co. of Phoenix. Mr. Sweet made the purchase for himself and for George D. Hull, Rochester; the Raquette River Paper Co., Potsdam; Urban C. Hirschey of the Climax Manufacturing Co. of Castorland, and Earl H. Benson, Pulaski.

A new board of directors was elected with the following members: Mr. Sweet, Dimon W. Benson, Edith D. Benson and Earl H. Benson, the latter three of Pulaski. Earl Benson was elected president, Edith Benson vice president, and Dimon Benson secretary and treasurer.

The Regal Paper Co. was organized in 1911 when Earl H. Benson became associated with the late Harry A. Moody. The late C. Frank Wood was elected the first president. The first year's business brought in about $10,000. The annual volume for recent years has been more than one million dollars. Fillmore G. Utley became associated with the company in 1921, buying the interest of Howard P. Denison of Syracuse. At that time he became its president and his son, George S. Utley, became vice president.

The concern sells its products in every state in the union and in some foreign countries. It manufactures nationally advertised brands of toilet tissue, wax paper and paper napkins, and the new management has added stock wrapping paper specialties and Christmas gift wrappers. The new management took possession at once. The same staff of workers and the same general policies will be continued.

◆ International Plans New Power Development

The International Paper Co. is planning an industrial development at Corinth which will entail an expenditure of between $2,000,000 and $3,000,000, according to information given before the Corinth village board by A. L. Johnson, engineer and assistant mill manager of the Hudson River mill of the International Co. Mr. Johnson appeared before the board to gain sentiment of Corinth officials regarding the granting of flowage rights adjacent to Pagenstecher Park and the Park Palisades. A mammoth power development which will serve to eliminate the present Hudson River Dam constructed in 1913 and the Curtis mill and dam developed in 1911 and 1912 was outlined by Mr. Johnson in his presentation of facts to the board.

An artificial lake extending from the present Hudson River dam to Lucerne, a distance of nine miles, was pictured by Mr. Johnson as made known to the village board that 25 feet of flowage rights against the Palisades and including the Indian Hollow section of the park would be required. An entire new dam structure rising more than 25 feet above the height of the present dam has been planned which will not only provide sufficient head for the operation of the Hudson River mill, but will provide for the almost continuous operation of an auxiliary power house to be erected on the Warren county side of the Hudson.

◆ Beebee Operates New Hydroelectric Plant

Operation of the new hydroelectric plant of the Beebee Island Corp. at Watertown was started Dec. 31. Only one unit was started on that date, but it was intended to put the second in operation about two weeks later, bringing the generation of electric current to 10,000 h.p. The surplus power amounting to about 41 per cent will be sold to the Niagara Hudson Power Corp.

Most of the members of the Beebee Corp. will use some of their respective shares of the power. Knowlton Brothers, Inc., manufacturers of colored specialty papers, will use its entire quota which amounts to about 14 per cent of the total generation. This concern will utilize its share for the operation of its mill, thereby effecting a great saving in plant operation costs. It was primarily due to the Knowlton com-

This Unique Twin Beater *meant* Severe Service Plus and *that* meant VIM!

It would be hard to imagine a more severe service for belting than that required on this unique installation in a large Middle-Western paper mill. A twin pulp beater, a double-end motor and a pair of 16-inch three-ply endless VIM Belts—operating 24 hours every day except Sunday!

VIM LEATHER BELTING was chosen for this drive because the mill executives knew it would stand the gaff. And they were right. Two years and seven months after the installation was made, VIM was pulling as strong as ever, unaffected by water, steam, acid fumes or the unusual character of the service.

Make your own test of VIM—and make it severe. You will discover what other paper mills *know:* that VIM is water-proof and fume-proof and that the special VIM process of mineral tanning always means longer life.

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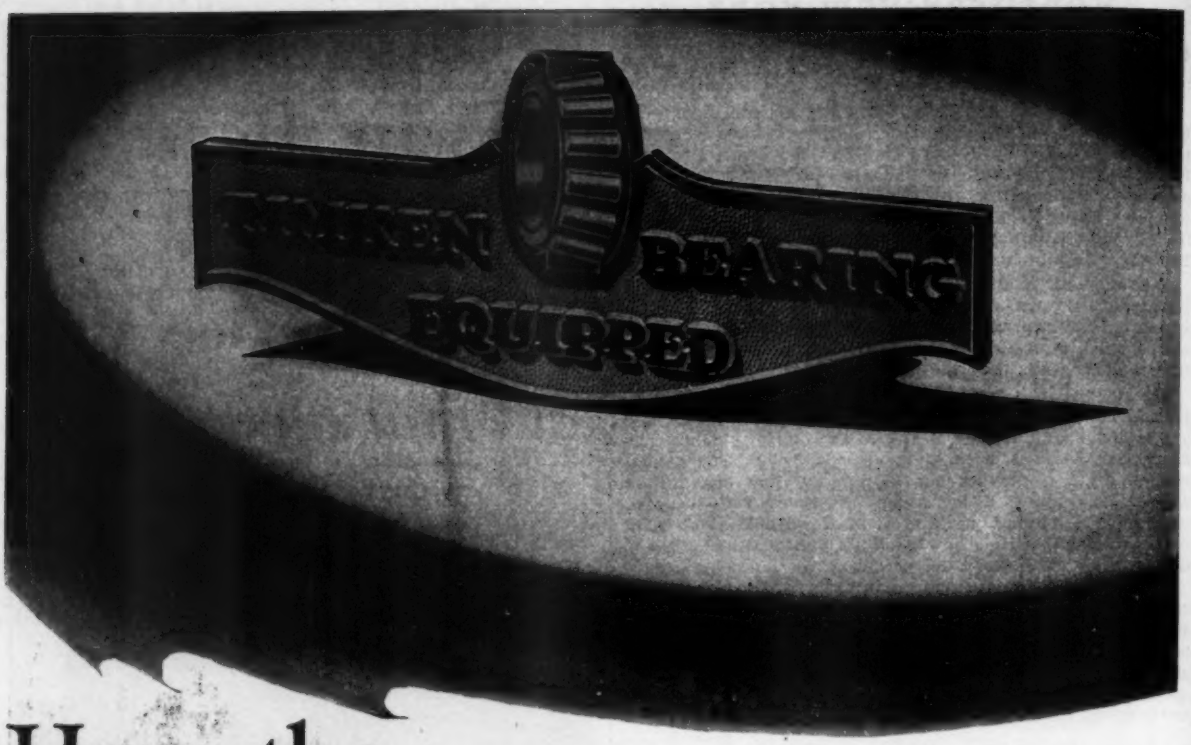
And All Over the World



How the paper manufacturer can make more money in 1932

Although paper production is still below normal levels, every indication points to greatly increased demand during 1932. Manufacturers whose production costs are lowest will find themselves in a position to profit greatly by this improvement.

This is proved by the experience of mill operators who are taking part in the sweeping modernization movement started this year.

Paper making machinery of every type is affected by this revolutionary time and money saving program, which consists of anti-frictionization on a wholesale scale.

Results hitherto unheard of have already been secured by putting super calenders, machine calenders, press rolls, couch rolls, wire rolls, felt rolls and drier rolls on Timken Tapered Roller Bearings.

Power savings range from 30 to 50%. Lubrication has been placed on a new basis of simplicity and economy. Speed and accuracy have been increased. Spoilage has been reduced. Maintenance costs have been cut to the bone. For instance, by putting their super calenders on Timkens, The Champion Coated Paper Company have cut their power costs in two, and increased production by 37½%.

Paper machinery manufacturers know the part Timkens play in cutting production costs, and are advocating a radical policy of Timkenization for all types of machines.

It will pay you to indorse their equipment. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN *Tapered Roller* **BEARINGS**

pany, working through its president, G. Seymour Knowlton, that the development of the power was brought about during 1931. Under arrangement of the water right owners about the island, who make up the shareholders of the Beebee Island Corp., each owner takes his respective share, uses as much of it as he desires and sells the balance to the Niagara Hudson Power Corp. under private agreement.

NEW ENGLAND

◆ Paper Companies Reduce Wages

Wage reductions by three New England paper companies indicate that the industry in general is following a trend started some months ago when Oxford Paper Co. made a ten per cent cut.

New England mills which have announced reductions include the American Writing Paper Co., Holyoke, Mass., 10 per cent; Cushnoc Paper Co., Augusta, Me., 5 to 7 per cent, and the Strathmore Paper Co., West Springfield, Mass., 8 and 10 per cent. The Strathmore reduction has been applied to salaried officials and office help, and both have been assured that salaries and wages will be restored when conditions permit. Other mills in the fine paper district have effected wage reductions.

◆ Freight Rate Complications

Surcharges which became effective January 4, takes the form of a second increase on paper in a month. The most disturbing factor is the threatened double surcharge on coal, as a very large proportion of the bituminous used in New England paper mills is received by coastwise barge or steamer from Norfolk or Newport News, Va., coming from West Virginia mines. The surcharge thus falls on two transportation services, the one to Hampton Roads and from New England ports to interior mills.

The New England Paper & Pulp Traffic Ass'n has taken the lead in opposing this injustice and through their intervention and the co-operation of the Boston Chamber of Commerce and Massachusetts Associated Industries, a scheme is to be worked out by which the northern and southern carriers will divide one through haul. The first two surcharges may be collected and claims made later for refund.

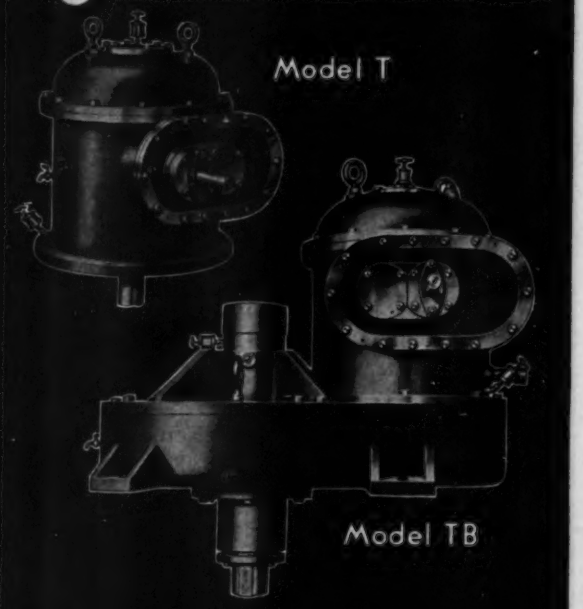
It has been suggested that cargoes coming forward to New England ports consigned to one consumer would take the single charge but those split up for several consignees might have to bear the double charge. Most of the paper mills receive their fuel in straight cargo quantities.

The application of the surcharge on pulpwood holds even more serious ramifications. Northern New England mills are awaiting definite word from the Maine Central R. R. as to their intentions regarding pulpwood movement within Maine. If applied, it will increase the percentage of truck-borne and water-borne wood. Objecting to high rail freights, a paper mill in the Penobscot Valley has received 30,000 cords of wood in the past 14 months and not a stick of it by rail, all, in fact, by water. Another mill unable to receive all its wood by water because of navigation restrictions in their section of the river have bought Nova Scotian wood, and had it trucked from a point below the dam at Bangor.

◆ PRACTICALLY all of the fine paper mills of Western Massachusetts have notified paper merchants of the decision to reduce prices. The reduction in cost and resale will range from as little as 3 per cent in some lines to about 10 per cent in others. Rag contents are chiefly affected. A few lines which have been put on the market during the past two years including some of the so called 25 per cent rag intermediate grades are left unchanged. These latter grades include some of the recent papers in a price range between the best sulphite bonds and the lowest previously quoted rag contents.

◆ A. G. McINTYRE and E. K. Mansfield, new owners of the Androsoggin Pulp Co., announce that they are shutting down the groundwood mill of the company at Steep Falls, Me., and are disposing of the hydroelectric power at that point to public utility interests. The six grinders are to be removed

NEW ENGLAND
Agitator Drives



- in standardized models for the most efficient application to stirrers for stock chests-clay and size mixers - color and coating mixers - dissolving alum - deinking and defibering news stock.

¼ to 50 H. P. and speed ratios up to 2,000 to 1.

Fully enclosed - continuous self lubrication - quiet running - anti-friction bearings throughout - oil trapped against leakage - high efficiency - utmost economy of operation.

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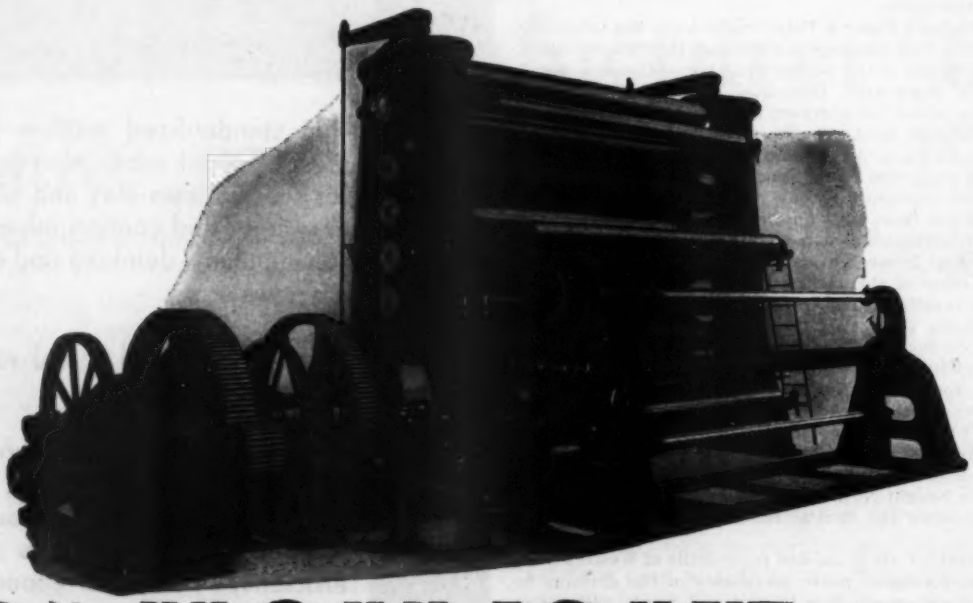
SUPER CALENDERS *and* Experience

Experience does not come over night,—not in the designing and building of Super Calenders. It is the result of long years of intimate study of the daily dozens of difficulties to be overcome in the Paper Industry. For 65 years the HOLYOKE MACHINE COMPANY has built Quality and Superior Performance into every HOLYOKE MACHINE. When planning purchases of equipment consult with HOLYOKE Engineers, Holyoke Machine Co., Holyoke, Mass.

Manufacturers of Super Calenders, Platers, Cotton and Paper Rolls, Washing and Beating Engines, Wood Pulp Grinders, Barkers, Chippers, Rag and Paper Dusters, Rag Cutters, Hydraulic Pumps and Presses, Hercules Water Wheels and Governors.



The HOLYOKE MACHINE COMPANY

FOUNDED 1863

to South Windham, Me., where they will operate electrically and permit the use of slush pulp in the beaters for the manufacture of woodpulpboard. A report that the company had also purchased the woolen mill of the South Windham Mfg. Co., in order to utilize the plant for making paper boxes has been emphatically denied.

♦ Need Pulp Standards

Speaking before the monthly meeting of the New England Purchasing Association's Paper Committee at the Chamber of Commerce on December 14th, Fred C. Clark, of Skinner & Sherman, industrial chemists and engineers, advocated definite standards for chemical wood pulp. These standards are coming in a few years time, he stated, and when generally adopted will enable a producer to specify pulps of definite qualities for definite needs conforming to Bureau of Standards and other specifications. Hit or miss buying of pulp will gradually disappear.

Mr. Clark, who has served with Pejebscot Paper Co., American Writing Paper Co., and the Bureau of Standards, gave a number of general hints to buyers and papermakers. Do not overdry paper, he said. It is better to calender paper after 24 or 48 hours of seasoning in the proper humidity than calendering direct from the dryers. The speaker found a greater use of the Dandy Roll, indicating a return trend in that direction. He insisted on adequate beating as prerequisite to good papermaking regardless of the wire shake or jordaning. Too much reliance is placed on the Jordan engine, in Mr. Clark's opinion.

With particular reference to paper tests, Mr. Clark admitted his liking for the Mullen tester. The combination Mullen and folding, which he called the "popfold" test, he believed the best general means of discovering the virtues or defects of most printing papers.

♦ THE PAPER CONVERTING Co. Inc., of Boston, has been chartered to conduct a converting business in paper. The capital stock is 5,000 shares of no par. The officers include William P. Yanes, of Newton, president; Benjamin A. Feinberg, of Boston, treasurer.

♦ THE TEXTILE PRODUCTS Corp. of 63 Wareham Street, Boston, has been chartered to conduct a general business in paper stock and other paper mills supplies and textile wastes. Maxwell Lewinsky, of Medford, is president, and Harry Pearl, of Arlington, treasurer.

♦ ON THE BASIS of gross sales of $318,380 and net before depreciation of $3,622 for the first three months under their management, Receivers George W. Wheelwright, George Alpert and Carl F. Woods, of the G. W. Wheelwright Paper Co., have been granted an indefinite extension of the Receivership with the requirement that they report on the company's financial and general condition every three months.

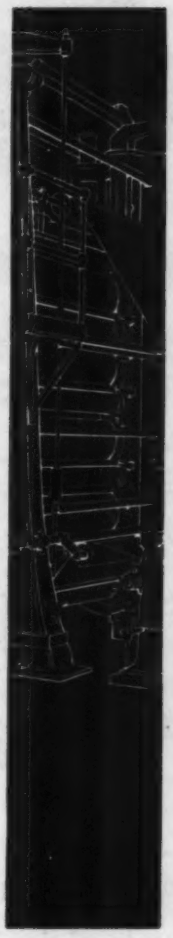
♦ TILESTON & Hollingsworth Co., Boston manufacturers, have added Dorchester Plate, a new, bright white, satin finish sheet. It has been designed to reproduce 133-line halftone, Ben Day, or line engraving with good ink absorption qualities, yet at a low price of 5.50c per pound in 1,000 pounds on skids, 5.25c in tons. That is the price to the printer as T. & H. sells practically all of its paper in New England direct.

♦ THE MUSKETAQUID mill of the U. S. Worsted Co., of Lowell, Mass., has been acquired by A. F. French & Co., paper box producer of Lowell, and will be used by that firm in the production of setup paper boxes, enlarging its capacity by a considerable quantity.

♦ ACE ART Company, Reading, Mass., manufacturer of paper specialties, is building a one-story addition to its plant at 12 Gould Street to provide more manufacturing space.

♦ ALFRED E. HALL, machine tender for the Pejebscot Paper Co., Brunswick, Maine, recently celebrated his eightieth birthday. Mr. Hall became connected with the Pejebscot Company fifty-six years ago when it was known as the Bowdin Paper Company and has been employed there continuously since that time. He has been a machine tender

For improved opacity in filled and coated stocks



The paper industry is showing increasing interest in the use of Titanox-B (Barium Base) as a means of improving opacity in paper stocks.

Titanox-B is widely known in the paint, rubber, leather and ink industries for its exceptional whiteness, high tinting strength, chemical inertness, unusual dispersing qualities, and moderately *high* bulking value. In particle size, Titanox-B is one of the finest of all white pigments. These properties should help paper manufacturers solve some of their processing problems—depending on the process or the type of stock produced.

Titanox-B is a true, composite, opaque pigment . . . a white, fine, uniform powder consisting of Titanium Oxide precipitated upon and coalesced with barium sulphate (blanc fixe).

In some cases the use of Pure Titanium Oxide (TiO_2) — another of our products—in combination with china clay is desirable.

Write for further information regarding Titanox-B and Pure Titanium Oxide—prices, chemical properties, etc. Address our nearest branch.

TITANIUM PIGMENT CO., Inc.

Manufacturers of

TITANOX-B (Barium Base) **TITANOX-C (Calcium Base)**

PURE TITANIUM OXIDE

60 John St., New York, N. Y. **Carondelet Station, St. Louis, Mo**

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NATIONAL LEAD CO. OF CALIFORNIA

2240 24th Street, San Francisco, Calif.

Canadian Distributor:

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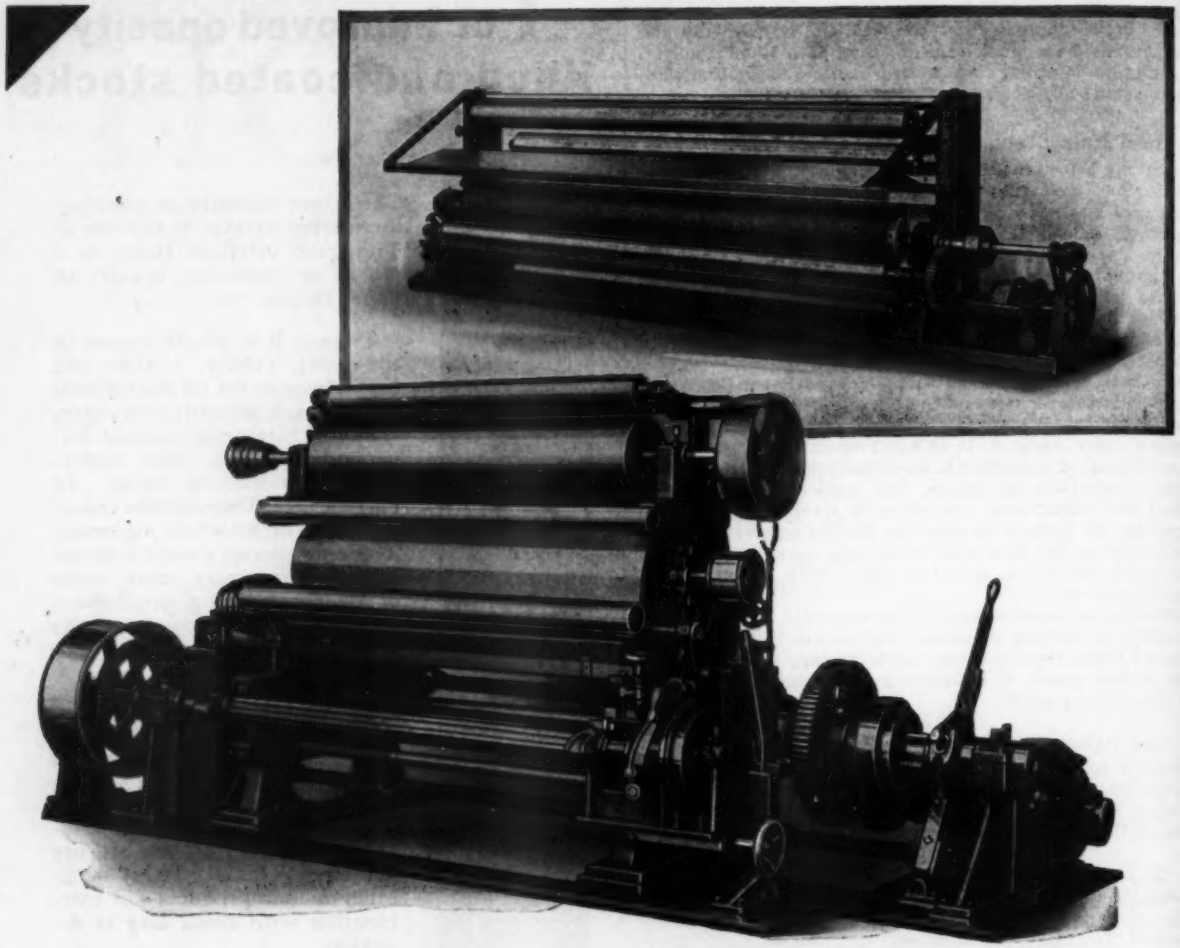
101 Murray Street, Montreal 132 St. Helen's Ave., Toronto

TITANOX

TRADE MARK REG. U.S. PAT. OFF.

TITANOX



Perkins Dampening Machine is another example of the result of machine engineering carefully applied to the requirements of the papermaker. It is proving itself highly efficient in operation.

Construction features are: the brush roll of Perkins individual design with aluminum lags mounted on bronze body; ball bearings throughout; regulation of the amount of moisture within very close limits; adjustable non-deflecting pan roll; variable speed drive.

B. F. Perkins & Son, Inc., Holyoke, Mass.

Engineers and Manufacturers

TRADE MARK REG. U.S. PAT. OFF.

Cotton Rolls	Web Supercalenders	Mullen Paper Testers
Paper Rolls	Friction Calenders	Tensile Testers
Embossing Rolls	Embossing Calenders	Ventilating Fans
Chilled Iron Rolls	Sheet Calenders	Rag Cutters
Granite Press Rolls	Platers	Stock Cutters
Glassine Supercalenders		Paper Dampeners
		Bleach Ejectors

for forty-eight years. Mr. Hall is in excellent health and hopes to see many more years of service.

◆ THE NEW H-Acid building of the Merrimac Chemical Company, Everett, will be ready for production in February.

◆ PARKER YOUNG Company, paper makers of Lincoln, N. H., have moved their head offices from the Board of Trade Building to 148 State street, Boston.

◆ A NEW low priced rag content bond is "Rockledge," produced by Millers Falls Paper Co., Millers Falls, Mass., which is offered through merchants to resell at 15.75c in cases. It is 25 per cent rag, clean bright white, crinkly and snappy, and is considered in the merchant trade an important contribution to the maintenance of rag content paper prestige in the lower price brackets.

◆ THREE paper manufacturers in New England are said to have either changed or to be on the verge of changing their power plant equipment from coal to oil.

◆ Typothetae Makes Economic Proposal

A recommendation of the Boston Typothetae to its members contains much that is of interest to paper mills. The proposals made to printers by their own organization follow over a year's intermittent activity by two committees representing the Typothetae and the Boston merchants. The committees desired to reduce the number of small orders to eliminate many other abuses against the "service" offered by merchants. The printers recommend that they do not expect many and unusual services; that the merchant be given more time to make deliveries, that requests for delivery be limited to two daily, that orders involving expensive toll calls to mills, express lots shipped from mills be eliminated wherever possible.

The matter of the quire as a minimum basis for broken package quantities was discussed, but the printer attitude was uncertain, and it was passed on for further consideration.

◆ HEAVY imports of wood pulp at Boston and Portland feature the December arrivals. One of the largest was the 6,500 ton cargo on the Finnish steamer, Wasborg.

◆ Freight Changes

A number of changes in freight rates on paper and paper-making materials have been docketed by the New England Freight Ass'n during the past month.

To meet truck competition, a 15 cent rate is proposed on waste paper from New York and Brooklyn to New Haven, Conn. The present rate is 17 cents.

Corrugated or indented paper or pulpboard is added to the exceptions of New England Lines providing 90 per cent of sixth class, the same as plain pulpboard.

It is proposed to list liquid chlorine gas in tank cars between U. S. and Canadian points as fourth class instead of the present 45 per cent of first class.

The classification has been amended to provide a separate class for pulpboard in loose sheets, and the old provision for loose sheets in ends of cars has been cancelled.

A rate of 18 cents per 100 pounds is proposed on wrapping paper from Hoosac Tunnel, Mass., to Northumberland, N. H., instead of the present 23 cent rate.

The New Haven R. R. will establish 90 per cent of sixth class rates to certain New England points where the present basis is higher on all kinds of paperboard. New England paper mills were quoted rates of 35 cents to Pacific Coast ports by the intercoastal steamship lines and 45 cents to British and European ports. These are unchanged from previous lows.

◆ BLAIR B. STRINGFELLOW, manager of New England sales for Albemarle Paper Mfg. Co., Richmond, Va., has been promoted to the general managership of eastern kraft sales with headquarters in the New York office, of which he will have general charge. Mr. Stringfellow has been in charge of the New England territory since 1929 and has accomplished

Jones

A name that has won a world-wide reputation through 75 years devoted to paper-making progress

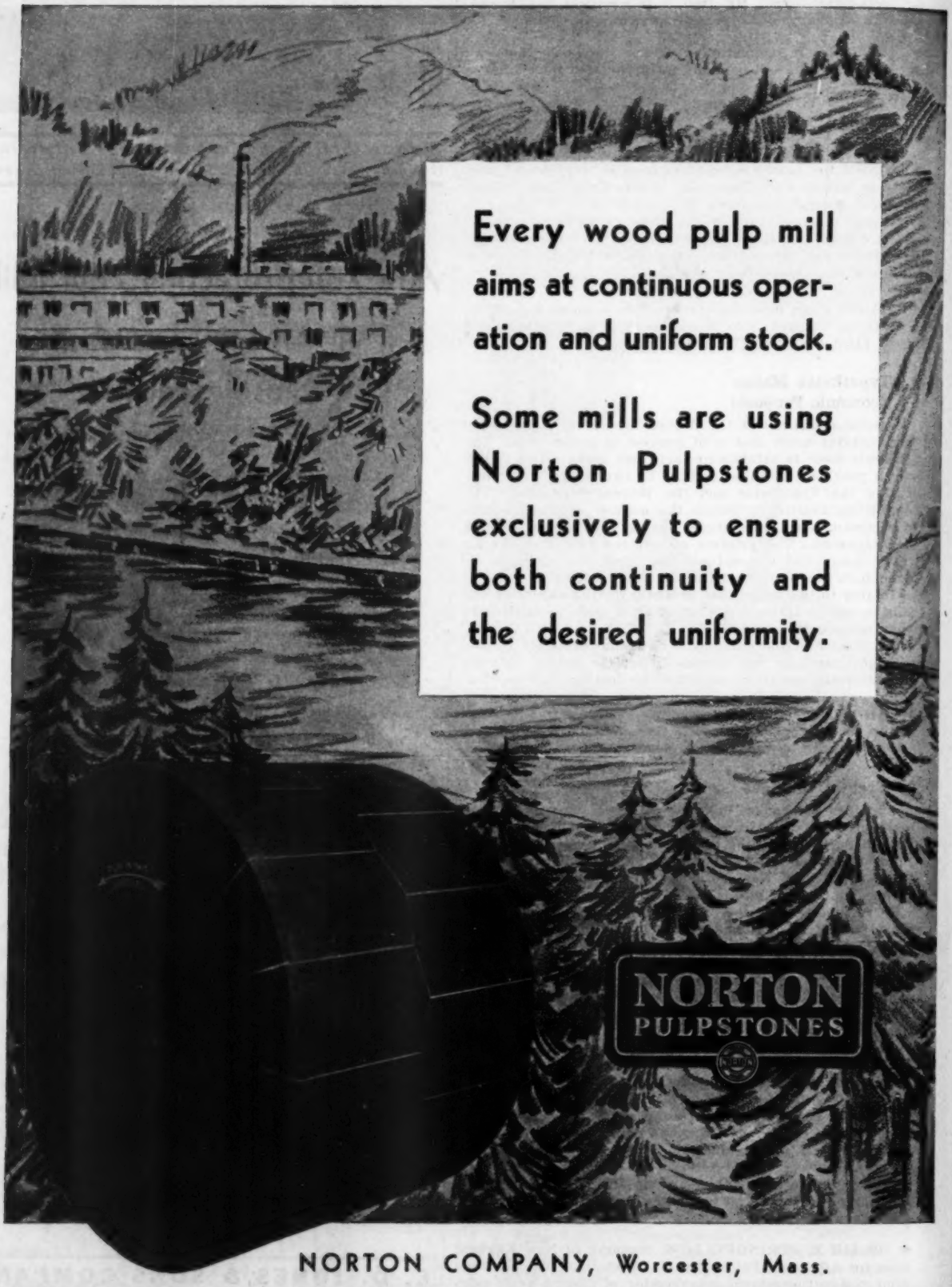
Are You Protecting Your Mill Against the Hazards of Obsolesence?

"There is no denying the fact that as a general rule industry has been looking after its equipment needs in a completely casual, haphazard fashion—as though this vital problem were but an incidental matter to be taken up at odd times with any resources not at the moment committed to some other purpose. This has contributed no small part to our present industrial woes. Unquestionably the time has come when American industry should abandon this dangerous nonchalance and arrive at a definite equipment policy. Whether that takes the form of a replacement sinking fund or some other equally sensible device depends largely upon the needs and abilities of the given firm. But in any case the experiences of the recent past show all too clearly the need for most serious consideration of our industrial practice in this important aspect."

—Dr. Julius Klein, Assistant Secretary of Commerce

PAPER-MAKING MACHINERY · ESTABLISHED 1846 · PITTSFIELD, MASS.

E. D. JONES & SONS COMPANY
PITTSFIELD-MASSACHUSETTS
BUILDERS OF HIGH GRADE MACHINERY FOR PAPER MILLS


Every wood pulp mill aims at continuous operation and uniform stock.
Some mills are using Norton Pulpstones exclusively to ensure both continuity and the desired uniformity.
NORTON
PULPSTONES

NORTON COMPANY, Worcester, Mass.

Canadian Trade Supplied by NORTON COMPANY OF CANADA, LTD., HAMILTON, ONTARIO

some noteworthy results. He will continue to have general oversight of that territory. Succeeding him in Boston will be Arthur Cherry, formerly superintendent of the Riverside and Hollywood mills of Albemarle.

♦ THE FIRST anniversary of the Maine Seaboard Paper Co., Bucksport, Maine, was celebrated with a banquet and smoker at Jed Prouty Tavern, Maine. C. F. Bagley, vice president of the company, was host. Among the guests was Mr. Stafford, of Rice, Barton & Fales, which company installed the four-drinier machines. Operating conditions since starting up have been excellent, and the company has orders for capacity production for some time ahead.

♦ E. E. HOWARD, for eight years superintendent of the Orono Pulp & Paper Co., Orono, Maine, passed away recently at the age of 56 years. Mr. Howard had been with the Warren Mfg. Co., now Riegel Paper Co., for a number of years, later with Keystone Paper Co.

♦ JOHN F. KUSTER, treasurer of the Andrews Paper Co., paper merchants of Boston, passed away December 10. Mr. Kuster was overcome by monoxide gas while working on his car. He had been with the company and its predecessors since 1899, and was highly regarded for his character and ability by associates, mill men and other merchants. He is survived by his widow and a son.

♦ J. L. HAMMETT Co., Boston, with converting plant at 290 Main Street, Cambridge, is building a $65,000 addition. This company produces paper school supplies in various forms.

PACIFIC COAST

[Washington]

♦ **Paperboard Co. Gets Large Order from Orient**

The Pacific Strawpaper & Board Co., Longview, is included in northwest industries that report a good business. A recent order for 61 carloads of board for the British-American Tobacco Co. of Shanghai has just been received, according to Charles F. Schaub, president of the company. This order will require 836 tons of paper board for packages to be distributed to the Oriental trade in the Shanghai district.

The company is planning to build a new plant for the manufacture of a patented crown packer for apples and fruit, to be known as the Booth Crown Pack, starting in March. Provision will be made to produce 50,000,000 of the packers annually.

♦ L. M. ALEXANDER was elected president of the Inland Empire Paper Co., which operates a mill at Millwood, at a recent meeting of the trustees. Judson G. Rosebush was chosen vice president; Waldo E. Rosebush, treasurer and general manager, and W. A. Brazeau, secretary and sales manager. Besides these officials, other members of the board of trustees include W. H. Cowles, Sr., who is chairman; W. H. Cowles, Jr., and John E. Alexander.

♦ PULPWOOD cutting has been a great factor in providing employment in the district around Grays Harbor for many months now and still continues, the laborers having been recruited for the most part from lists of the welfare organizations. Several hundred are given steady work at $2 a cord, the price paid thus far, although there has been some talk of reducing this wage.

♦ **Rainier Ends Stream Pollution Suit**

The Rainier Pulp & Paper Co., at Shelton, which was annoyed for the past year with litigation regarding contamination of oyster beds through mill waste, has just completed full adjustment of this problem, final papers having been filed late this year.

This mill is one with an optimistic viewpoint. In recent months it has perfected the development of rayon grade

for

Heavy Stock

If you handle stock above 4%, you ought to know about the operating records Buffalo Non-Clogging Pumps are making on consistencies up to 8%.

Operators in mills where they are in use are not troubled by shutdowns due to clogging and wedging, and because of the internal construction of these pumps their initial high efficiency is maintained.

Check operating records before you buy any pumps—and check OUR records at the mills where Buffalo pumps are in use.

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In Canada: **Canada Pumps, Ltd.**
Kitchener, Ontario

"Buffalo" paper stock pumps

If 10% would insure your job... would you Buy?

No matter how sure we may feel about our jobs, few of us would hesitate to spend 10% of our income to *insure* ourselves against job-loss.

None of us can *buy* such an insurance policy. But if we all work together, we can *make* one.

Spend 10% more!

How shall we do it? . . . Simply by spending 10% more than we've been spending—buying the things we need *now*, instead of waiting till spring.

A lot of us are afraid of the future. But the future's all right. It's the *present* we should worry about. There'll be plenty of jobs for everybody sometime—but there are too few today!

Because we're afraid, we are saving a larger share of our earnings than we ordinarily would. This kind of abnormal saving has taken millions of dollars out of circulation so they can't work. These sleeping dollars have forced our friends and neighbors out of their jobs.

By putting these sleeping dollars to work again—to buy what we need *now*—we create new jobs. And *new* jobs help create new prosperity.

In "hard" times, dollars always *buy more* and *earn less*. Our spending dollars buy about half as much *more* today than they did two years ago. But our *saved* dollars bring about a quarter *less*. Our spending dollars are worth $1.50—our saved dollars are worth about 75c.

A dollar *spent* now is worth $1.50.
A dollar *saved* now is worth 75c.

Today's prices are low—lower even than in 1921—some of them lower than in 20 years. We're surrounded by bargains—*real* bargains—fine quality at low prices.

Pretty soon—before you know it—these low prices will start *up*. Then the buying-power of our dollars will begin to *shrink*.

So, when we buy now, we are doing ourselves a double-barrelled favor: we are getting the most for our money, and we are helping to insure our jobs!

There are about 30,000,000 of us who still *have* jobs, and probably twenty million of us are spending less than we can afford with present income. Let's make our jobs secure and create jobs for those who have none—by spending our dollars normally *now*.

THE NATIONAL PUBLISHERS' ASSOCIATION

"To use available income to purchase goods normally needed and in the replacement of which labor is employed, is a condition precedent to any hopeful program to constructively increase employment."

From the Recommendations of the Committee on Unemployment Plans and Suggestions, of the President's Organization on Unemployment Relief.

cellulose which is distributed to rayon and cellophane manufacturers under the trade name "Rayonier." D. B. Davies, superintendent, says that about 300 men are employed at present.

[Oregon]

♦ Crown Willamette Distributes Employment

To aid in restoring normal employment conditions, the Crown Willamette Paper Co. on December 30 announced a new policy for its groundwood mill and sawmill, West Linn, effective at once.

C. E. Bruner, manager, who had just recently announced resumption of operation of the paper plant on a six-day week basis for the rest of the season, states that the wood mill and sawmill will operate in four shifts of six hours each rather than in three eight-hour shifts, thus distributing employment to men of families in the vicinity. Only men previously employed by the mill who live in the district will be employed.

♦ THE HAWLEY Pulp & Paper Co., Oregon City, started three machines December 28 after a short shut-down, and is now giving employment to 350 men, all old employees, according to W. A. Kelly, vice-president and general manager.

♦ A SALES MEETING of officials and representatives of the Columbia River Paper Mills, Vancouver, Wash., and the Oregon Pulp & Paper Co., Salem, both Leadbetter companies, was held in Salem December 21, 22 and 23 for the purpose of discussing market problems and distribution for the coming year. Wm. S. Walton, president of the Western Waxed Paper Co., Salem, was also in attendance, and the three companies laid plans to keep the plants running as continuously the coming year as they have done during the past twelve months.

♦ H. C. MACAULAY, formerly associated with the Continental Paper & Bag Corp., Rumford, Maine, as electrical consultant, has located in Portland. He expects to continue his work in some similar connection in the northwest.

♦ E. R. BROWN, general manager of the Columbia Basin Division of the National Safety Council, with headquarters in the Multnomah hotel, has appointed a committee of Oregon pulp and paper men to act in an advisory capacity on a state safety program. This committee will meet with other state groups in industry and present the interests of the pulp and paper industry from a safety standpoint.

♦ SENATOR McNARY was responsible for a resolution introduced in the senate last month which resulted in the senate asking the tariff commission to investigate the effect of foreign currencies upon importation of wood pulp. The northwest delegation of senators and representatives from Oregon and Washington are holding regular conclaves in the interest of the pulpwood industry, and each session is watched with intense interest in the home states.

[California]

♦ Publishers Negotiate Large Timber Deal

George T. Cameron, manager of the San Francisco Chronicle, and Harry Chandler, publisher of the Los Angeles Times, are reported as active in a timber deal in the Quatsino district of northern Vancouver Island. Just what the program of producing newsprint for these publishers from logs in this northern district would include has not been indicated, but it is probable that the logs would be reduced to pulp in Canada and then the pulp manufactured in some northwest mill in the United States, according to present speculation.

This timber in question is said to include about 7,000,000,000 feet owned by the Falk corporation connected with Allis-Chalmers.

The Zellerbach company is also named as an associate of the newspaper publishers in acquiring this tract, and it is

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When something breaks . . . and steel is needed in a hurry . . . you can depend upon Ryerson for quick action. Complete stocks of all steel products, including:

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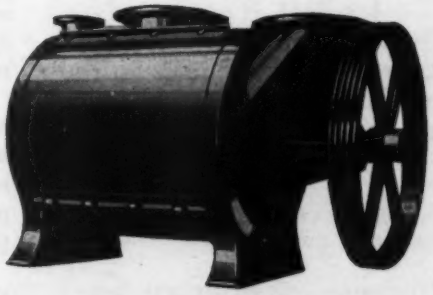
Until you've seen the Sensation of the Pulp and Paper Industry



NEW APMEW PULP SCREEN

Buy no Pulp Screens until you have seen the NEW APMEW PULP SCREENS, built in two sizes. You'll marvel at the downright cleverness of them. You'll be amazed at their organized features. You'll want the savings in your mill that they are producing for many users. And you'll gladly pay the moderate price asked for them. Your people will thank you for a better product and for effecting unusual savings.

If you do not know all about the NEW APMEW PULP SCREENS, write now for full information.

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Glens Falls, New York

Profitable
New Year's Resolutions

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Whether you believe in the making of New Year's resolutions or not, we feel that you are interested in saving money, time and labor in the production of your pulp or paper.

The Paper and Pulp Mill Catalogue has been published for a number of years for the primary purpose of serving production, purchasing and engineering executives of the pulp and paper industry. It is the outstanding reference work of its kind published in the interests of the industry. The book contains a comprehensive index of mechanical equipment, supplies, chemicals and dyestuffs as well as an extensive listing and description of contents of books interesting to pulp and paper makers. It also includes a directory of institutions in the United States and Canada that are presenting regular courses of study in pulp and paper making together with an index of trade names, and a volume of useful information for pulp and paper manufacturers. The useful information section alone contains nearly 50 pages of highly specialized data for the production and engineering executive.

In addition to the material which has already been suggested, the catalogue contains a large number of advertising pages in which specific information pertaining to the products of important and reliable manufacturers serving the pulp and paper industry is presented.

A recent issue of this catalogue is available to you in your mill as a production, engineering or purchasing executive. Use it whenever occasion permits. It will save you money by saving time and labor.

Address all communications to the

PAPER AND PULP MILL CATALOGUE

333 N. Michigan Avenue **Chicago, Illinois**

also reported that the Vancouver Kraft Mills, Ltd., at Port Mellon, B. C., which is owned by Frederick W. Leadbetter, would be bought by the Californians, but this has not been confirmed.

◆ ZELLERBACH representatives met in San Francisco for the annual four-day conference December 19-22; the first two days being devoted to managers' meetings and the last two taken up with efforts toward standardization. Harold Zellerbach, president of the Zellerbach Paper Co., and Louis A. Colton, vice president, were in charge of meetings.

◆ HAROLD L. ZELLERBACH, recently vice president of the Pacific States Paper Trades Association, succeeds George L. Tompkins, as president of the organization. Mr. Tompkins, who was manager of the Sierra Paper Co., Los Angeles, has left for the middle west to become associated with the Butler Paper Co.

WISCONSIN

◆ Paper Mills Relieve Unemployment

Steady employees of paper mills whose jobs might be jeopardized by present business conditions are being given every consideration by paper mills of Wisconsin in plans of various kinds to help solve unemployment relief.

Four shifts of six hours each in the paper mill, power and paper stock departments are in effect at the Hummel & Downing Co., Milwaukee, on a five-day week basis with day and night work alternated. Two five-hour shifts work five and a half days in the converting departments. Approximately 700 are kept employed and 200 more have jobs than if the usual three-shift plan of eight hours was used. The company is having the best year in its history, John L. Barchard, president, says.

Employees of the Northern Paper Mills, Green Bay, voluntarily agreed to go on a six-hour shift so as to divide work with men formerly on construction and special work, thus taking care of 75 more men. Those laid off draw "dismissal wages" weekly under a plan devised by Judson G. Rosebush, vice president and general manager. The amount is sufficient to buy necessities and the pay ceases if they obtain other employment. Only twelve are on this basis up to date.

At the Badger Paper Mills, Inc., Peshtigo, the situation is so favorable that not only every available man in the city is employed, but unemployed of the neighboring city of Marinette are being provided steady work. The mill continues to make rapid progress under the direction of E. A. Meyer, president and general manager, who took over the defunct Peshtigo Paper Co. less than three years ago, has paid dividends, liquidated bank loans, retired $140,000 of bonds not due for another seven years and has the company in a good cash position. The sulphite mill is producing 60 tons daily and the paper mill 50 tons, with 250 men employed. Newspapers all over the country have given wide publicity to this situation so unique during a depression.

◆ MILLS in the vicinity of Appleton have been averaging 80 to 85 per cent of normal operations, according to a recent survey. Allied factories making machinery and equipment are on a basis of 30 to 50 per cent. The five-day week and staggered employment are the general policy. It is ordered that the volume of orders appears to be sufficient for steady winter operations. Specialty mills are on a full operating schedule, as a rule.

◆ Forestry

Since R. B. Goodman, Marinette, prominent lumberman interested in some Wisconsin paper mills, became a member of the Wisconsin Conservation Commission, that body has taken a deeply sympathetic interest in the pulpwood situation confronting the industry. Annual tree planting on State owned cutover lands will be increased from 1,000 acres to 8,000 or 10,000 acres. Lands adjacent to paper mills will be among the first selected and varieties will be planted suitable for pulpwood. About 5,000,000 seedlings will be purchased and planted by prisoners of the state housed in prison camps.

DO YOU KNOW!

Or Are You Taking It For Granted

that the felts you are now replacing on your machine every few days are the very best felts for your particular requirement?

Satisfactory water removal is important, 'tis true . . . but not the whole of the story. Are your present felts showing the wearing qualities you have the right to expect? That also is important.

It would pay you to check up by switching over to Orrs for a spell. Mills that try this method of checking up usually learn something about the relative merits of various brands that stands them in good stead ever after.

Orrs are also unexcelled for their water-removing qualities.

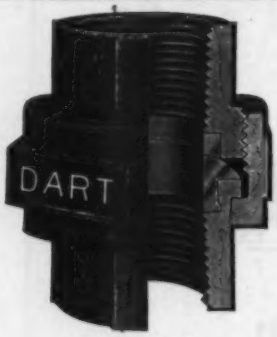
Consult the nearest Orr representative.

The Orr Felt & Blanket Co.

Piqua, Ohio

ORR FELTS

Opportunity Section



Know the merits of the Dart Bronze to Bronze ground seat Unions

Try a free sample

Strength of Malleable Iron in combination with

2 Two Non corrosive seats of bronze

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Providence, R. I.

Distributors
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Pickles' Patent Automatic Steam Regulator FOR Paper Making Machines

Which absolutely control the drying of the sheet. Installed on sixty days' trial

W. F. PICKLES **Buckland, Conn.**

Roeper Electric Hoists

For lifting paper rolls, removing calender rolls or raising Fourdrinier wires, use ROEPER Type "R" Electric Hoists—With or without Trolleys—Speeds up to 40 feet per minute—Send for Bulletins.

ROEPER CRANE & HOIST WORKS, Inc.
1724 North 10th Street **READING, PA.**

Member of Electric Hoist Manufacturers Association

BARKER-DOOLEY COOKING PROCESS

HIGHEST QUALITY SULPHITE PULP at LOWEST COST

Costs LESS to install and operate than others — STRONGEST cooking liquor — MOST positive CIRCULATION — MOST EFFICIENT PENETRATION—Highest YIELD of fiber — Lowest usage of SULPHUR and STEAM — Eliminates PEAK LOAD on boilers.

BETTER SULPHITE at LESS COST

RESULTS GUARANTEED

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ATTENTION!

Managers, Superintendents, Technologists

Increase Your Profits!

New bleaching process for Sulphite, Groundwood, Sulphate, Jute and Straw.

Also processes for—

De-Inking
De-Waxing
De-Asphalting
Elimination of Pitch
Chemical Hydration of Fibers

Address all inquiries

Box 184 . . . The Paper Industry

The Nekoosa-Edwards Paper Co., Nekoosa, also intends to enlarge its forest nurseries by entering additional lands under the forest crop law exempting them from taxes until the timber is cut.

All told, the state of Wisconsin will add 388,124 acres to the amount of lands entered under the forest crop law, if all applications for exemption except for a tax of ten cents an acre are granted by the conservation commission. This nearly triples 139,355 acres entered last year.

Fire lanes and telephone communication have been completed in the 11th fire district, embodying Adams, Juneau, Portage and Wood counties. Four lookout towers also have been added. Further fire lanes will be cleared by sixty men encamped for the winter in the Thunder Mountain state forest, Marinette county. The Government has appropriated $47,453 for forest fire fighting in Federal preserves, and the total available with the state's added will be $404,225.

About $400,000 was spent by the U. S. Forest Service for roads, telephones, towers, buildings, trucks and other fire prevention equipment for the large federal forest preserves. The government also paid land owners $171,551 for lands added to the Federal forests.

◆ Kaukauna Plant Remodeled

Most of the construction work is completed to provide for changes at the Thilmany Pulp & Paper Co., Kaukauna, after stepping up the crew of the Permanent Construction Co. to 100 men recently. An extension 43 by 280 feet, one story, was made to the machine department and a warehouse unit built 80 by 216 feet in size. The former turbine room also has been remodeled to provide manufacturing space.

The company was planning to move its two machines to Kaukauna soon from the Wisconsin tissue division at Appleton, and abandon the latter mill for an indefinite period. Delivery of a new paper machine also will be made soon. The machines will then have approximately a great enough capacity to consume all pulp made by the company.

◆ CONSTRUCTION of the $900,000 building for the United States Forest Products laboratory on the University of Wisconsin campus at Madison is well under way. C. B. Fritz & Co., Madison, are the contractors, and Holabird & Root, Chicago, are the architects. The six-story structure will be U-shaped, 275 feet in length and provides 175,000 square feet of floor space for testing and manufacturing equipment for every type of wood utilization. Complete paper and pulp machinery on a reduced scale will be installed.

◆ RIGHT of the Wisconsin Valley Improvement Co., Wausau, to build dams and locks over an expanse of 66 miles on the Wisconsin River is threatened. The concern is a holding company in charge of dams and water supply for all the paper mills along the river. Farmers to the number of 500 are demanding a repeal of the special legislative franchise, arguing the company has power to flood 3,125 square miles of territory.

◆ ORGANIZATION of the Atlas Tag Co., has been completed at Neenah, where a plant will be established to manufacture, sell and distribute tags, gummed labels, gummed tape and other specialties. The concern is capitalized at $25,000.

◆ ABILITY of the Interlake Pulp & Paper Co., Appleton, branch mill of the Consolidated Water Power & Paper Co., to complete two full years of safety appears certain now. The mill has not had a lost time accident since Feb. 16, 1930, and is striving to reach that date in 1932 with the same outstanding achievement. All mills of the Consolidated bettered their record in 1931 by a great deal over previous years. There have been 14 lost time injuries in the five mills in eleven months. The Stevens Point mill has a perfect record since August, 1930.

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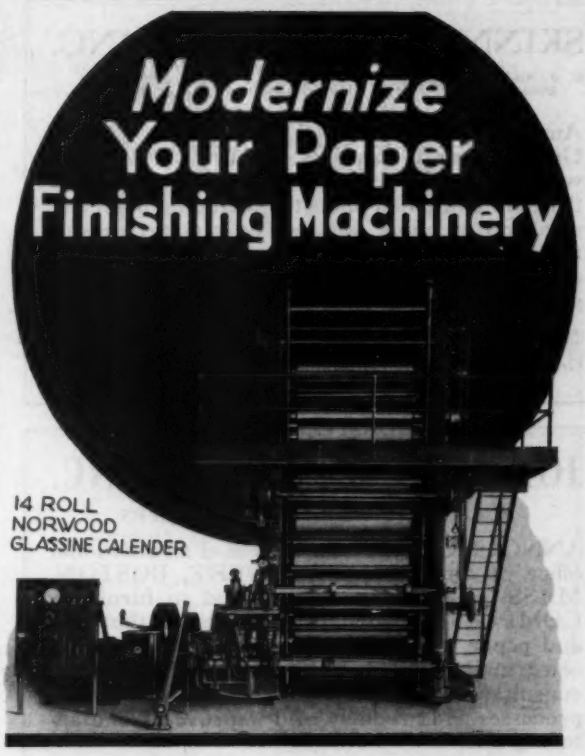

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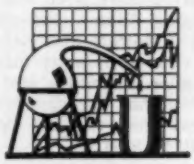

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ities, and the company also looks forward to the possibilities when the Great Lakes-St. Lawrence waterway eventually is completed. Coal, sulphur and other materials also can be handled via water. Local contractors and local labor are being used.

◆ ABANDONMENT of water power during periods of summer drouth will be minimized by an order of the United States war department ordering that the level of Lake Winnebago be kept at 21¼ inches above the crest of the control dam at Menasha, Wis. for all of the Fox river dams. This is a raise of six inches, meaning much because of the vast size of the lake as a water storage. Riparians previously succeeded in having the level lowered, but municipalities joined with the paper mills in pleas on sanitation and navigation requirements and had the change made. A further fight is planned by riparians owning lands on the upper river, but it is believed the order will stand permanently.

◆ MANUFACTURERS have been uncomfortable during a special session of the Wisconsin legislature now in progress at which increases in income taxes are proposed amounting almost to confiscation of wealth, and proposals for compulsory employment insurance financed entirely by the industries. The assembly will pass the measures as demanded by Gov. Philip F. LaFollette by a large vote, but the senate is conservative and has enough votes to keep the measures within reasonable bounds. A resolution has passed both houses requesting newspapers of the State to place in their mastheads information as to where they buy their newsprint. The move is aimed at Canadian mills, and amounts to a doctrine of embarrassing publishers who do not buy paper made in Wisconsin. Paper mills were among the first to respond to the governor's request to stagger employment and divide work to relieve unemployment and are experiencing a rather negative type of appreciation at the hands of the State.

◆ THE SAFETY school conducted by the Rhinelander Paper Co. and other industries at Rhinelander, Wis., came to a close with an address by Elwood T. Bailey, of Los Angeles, Calif. Certificates for regular attendance were given to 108 employes of the paper mill, and four from the Daniels Manufacturing Co.

◆ ROBERT L. BURNS, plant engineer for the Mosinee Paper Mills Company, Mosinee, passed away suddenly December 24. Mr. Burns has been employed as an engineer with the Mosinee mills for the past fifteen years and has taken an active part in the progress and development made in the kraft industry. He is survived by a widow and one son.

❖ ❖ ❖

◆ THE NEXT gathering of the Paperboard Industries Association will be in Chicago, at the Congress Hotel, January 19, 20 and 21, 1932. The executive committee and all standing committees will hold meetings on the 19th. Group meetings will be held on the 20th and on the last day all groups will unite in a general session.

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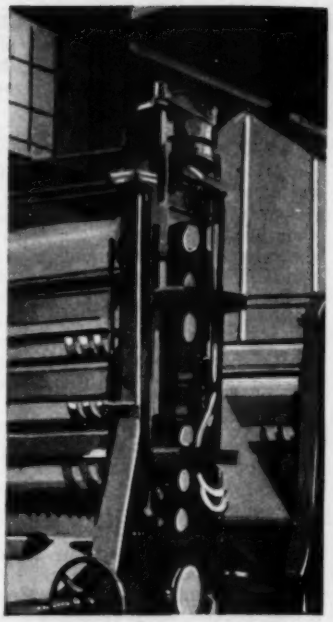

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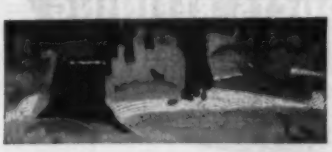

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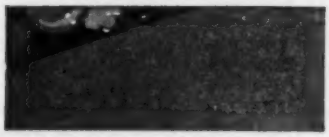

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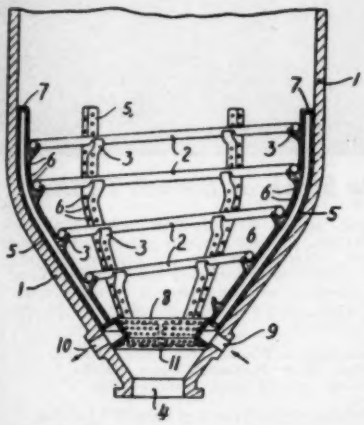
TECHNICAL DEVELOPMENTS

IN THE PAPER INDUSTRY ■ DOMESTIC AND FOREIGN

The following abstracts are of the latest developments found in the foreign press and patent offices. Photostats and translations of complete articles and patents can be obtained at cost price.

◆ Pulp Digester

The outer wall of the digester in the lower portion of the same, as shown in the accompanying illustration, is represented as a thick massive wall (1) for the purpose of simplifying the drawing. The heating elements (2), which are arranged in the form of a spiral in the usual manner in the lower portion of the digester, that is in the conical part of the same, consist of a number of coils of pipe, which are arranged close to each other and which are supported by suitable carriers. In accordance with the invention, the screen, which is com-



monly located near the discharge opening (4), is composed of a number of separate hollow bodies (5), which are distributed along the inner circumference of the digester. These hollow bodies are provided with carriers (4) for the heating pipes (2). These heating elements (5) are provided with perforations on that side which is turned inwards. Similar perforations are also arranged in the two longitudinal sides of the hollow body (5).

As may be seen from the illustration, the carriers (3) are made in the form of parts of the hollow body (5), so that these serve as carrier devices for the heating elements (2). The hollow bodies (5) are supported below on the ring-shaped hollow bodies (8), which serve as a collecting box and which are provided with the inlet (9) and the outlet (10) for the wash liquor as well as for the digestion liquor; the inner space of the hollow bodies (5) is connected at the lower end with the aforementioned collecting box. The interior space of the annular shaped hollow body (8) is separated into several spaces by the walls (11) and is provided with perforations.

When the digester is filled and must be emptied, then this is accomplished by opening the outlet (10), with the result that liquor flows through the perforations (7) and (6) in the hollow body (5), and, flowing down in the same, it reaches the annular shaped hollow body (8), from which it is finally removed to the outlet (10). Knut Madsen Strand, Drammen, Norway. German Patent No. 527,206.

◆ Paper Half Stuff

This patent is concerned with a process for the working up of waste from cotton goods which have been contaminated with gums, in order to produce half-stuff or whole-stuff. The new process makes use in the first place of the wet treatment carried out in rod mills and ball mills, in which the twisted and agglutinated fibers are released, without any injury or shortening of the fibers taking place.

The fibrous mass, which has been disintegrated and which is permeated with particles of gum, is subjected to a sedimentation or elutriation process. This depends on a fact, which has been substantiated by tests, that the particles of gum and the like are specifically heavier in their present impure form than the fibers themselves. Therefore, they have a tendency to sink to the bottom of the sedimentation apparatus through the strongly diluted fiber mass. An essential condition for this process is that the movement of the liquid and the dilution are so strong, that the particles on their way to the bottom are not retained by the floating fibers. Any of the usual elutriating apparatus may be used for carrying out this process.

In order to facilitate the separation of the gum particles and the like from the fibers, a treatment with chlorine is carried out advantageously either before or after the mechanical treatment. The fibers, which have been freed from gums and impurities, are colored mostly a grayish yellow, and require a bleaching, when they are to be worked up into a fine grade of paper. Dr. Hans Wrede. German Patent No. 529,176.

◆ Debarking and De-Basting Wood

It has been discovered, that the bast fibers can be loosened up by treatment with acids and therewith the bark can be removed from the wood. The substances, which hold the bast fibers fast to the wood, can be removed by hydrolytic substances, particularly acids, acid salts and acid-forming materials; for example, hydrochloric acid, sulphuric acid, sulphur dioxide, bisulphates, chlorine, etc. The adherent substance is converted into a slimy substance, so that the bast fibers can be easily removed from the woody matter by mechanical treatment, the operation taking place after treatment with acid. The fibers are then washed with water. Dr. Carl G. Schwalbe, Eberswalde, Germany. German Patent No. 527,705.

◆ Apparatus for Treating Pulp

The general arrangement of the various parts of the apparatus in which it is possible to effect various treatments of pulp and the like materials, such operations as bleaching, etc., is shown

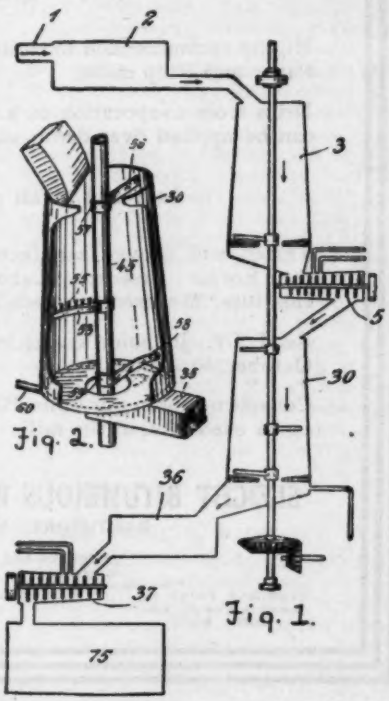


Fig. 2.

Fig. 1.

in Fig. (1). This installation is for the treatment of pulp in two stages, in which a strong liquor is employed in the first stage and a weaker bleaching liquor in the second stage. The non-bleached pulp enters the apparatus through the conduit (1), passing directly into the concentrator (2). Then it passes through a compensating or equalizing tower (3) into the mixer (5). After the stock has been mixed, it flows down into the bleacher proper (30)—this apparatus may also be used for coloring the paper pulp. From the apparatus (30), the pulp passes down through the washer (36) and finally through another mixer (37). The material then passes into an apparatus (75) in which the second bleaching stage is carried out with the

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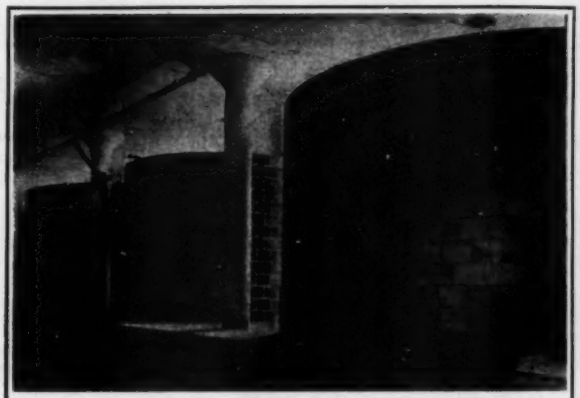

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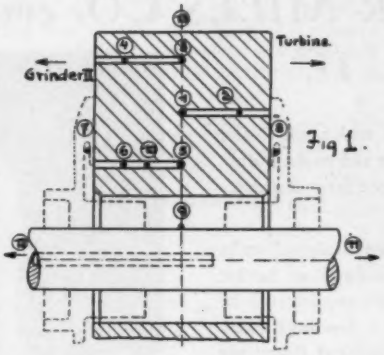
aid of a liquor that is of lower concentration than the one used in (30). When the bleaching of the pulp is carried out in this manner, it is claimed that better results are obtained than otherwise. The interesting part of this installation is the bleacher (30) which is shown in greater detail in Fig. 2. A central shaft (45) passes through this conical shaped apparatus. This shaft also extends through the compensating tower (3), as seen in Fig. 1. The shaft is provided with arms (53) which are provided with nozzles through which the bleach liquor is caused to enter the bleacher and come into contact with the stock. The rotation of the shaft, which is accomplished by the driving gears located at the bottom of the same (see Fig. 1), assures thorough mixture of the liquor with the stock and effective bleaching. The arm (58) is used for the purpose of aiding in the removal of the bleached stock from the apparatus. Carl Busch. French Patent No. 699,075.

◆ Measuring the Temperature in Grindstones

Experiments were carried out for the purpose of determining the friction temperature as well as for establishing the effect of the friction temperature on the grindstones, on the fastening of the stone to the shaft and on the shaft as well. Details are given of the procedure adopted in carrying out these determinations. Fig. (1) shows the manner in which the thermal elements are distributed in the stone. These elements extend straight across the width of the stone. The elements are divided into sections, each section containing five elements and the total is forty elements in eight sections. Three elements of each group indicate the temperature which is caused by the heat of friction penetrating into the stone. The thermo-



elements are made of copper and constantan.

Not only must the temperature be controlled during the grinding operation, but it was much more important to determine the manner, in which the temperature of friction is affected by increasing the load on the grinder. The manner, in which the stone behaves as it cools down, was also observed. The investigation included several thousand measurements. The results are given in graphical form in the original article. The curve sheets show clearly the points at which the heat of friction, which is absorbed by the outer part of the stone, penetrates into the interior. Fig. (2) shows the manner in which the temperature of the stone varied at full load. Curves (3) and (4) refer to the temperature in the external zone of the stone, curves (1) and (2) to the middle zone, curves (5) and (6) to the inner zone, curves (7) and (8) to the rosettes that fasten the stone, curve (13) to the wood that is in the ground condition and curve (14) to the fresh water fed to the grinder.

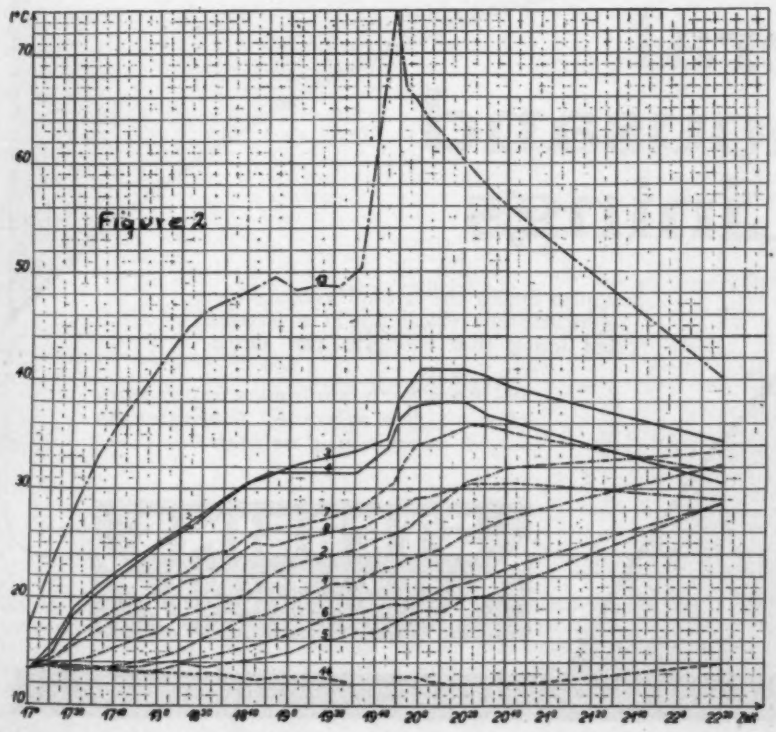
The net result of this investigation is that the natural stones are much more capable of adapting themselves to the variation of the temperature within the stone than the artificial grindstones. There is nothing to fear in the natural stones being disintegrated by the heat of friction. A long discussion followed the presentation of this paper before the German Paper and Pulp Chemists and engineers meeting. Dr. F. Ruehlemann. Der Papierfabrikant, 1931, 461-476.

◆ Normal Conditions for Cooking Rosin Size

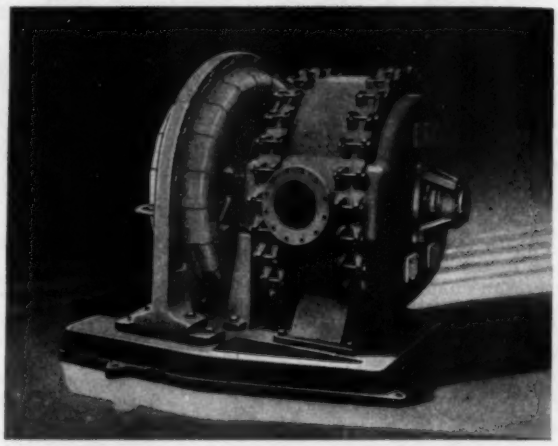
The experiments, which were carried out by the author, showed, that the cooking operation may be divided into two stages. The first of these is the saponification of the resinic acids and the second the solution of the free rosin in the rosin soap. This solubility depends on certain conditions. A certain amount of water must, of course, be used for the cooking operation, so that the free rosin will dissolve completely thereafter. The maximum and the minimum concentrations of the soda solution should be 36 deg. Be. and 23 deg. Be. At a boiling temperature of 97 deg. C., the free rosin dissolves only incompletely in the rosin soap, and it is only after a certain quantity of water has been evaporated, that the free rosin dissolves entirely in the soap solution. At the same time, the boiling temperature must be increased to 101 to 102 deg. C. Rosin can be saponified with caustic soda. Nevertheless, the use of soda is more advisable, inasmuch as the evolution of carbon dioxide effects a thorough mixing of the substance that is being cooked. Lapkin. Bumaschnaja Promischlennost, volume 9, number 11, pages 24ff.

◆ The Sizing of Paper

In spite of the great deal of work that has been done on the theory and practice of sizing, there are still problems which remain to be solved. The trouble is not with the raw materials, for their quality does not change even over a period of years. The variation is in the way in which they are used. Thus as far as the sulphate of alumina is concerned, the variation in the quantity used is not caused by the nature of the rosin size that is used, but it depends rather on the nature of the water that is used in the process. A number of experiments were carried out with poor grades of rosin and in all cases this was found to be fatal to obtaining paper of good sizing quality. It was found that all the sizing, which is introduced into the beater, should be precipitated as completely as possible on the pulp fibers without the intervention of substances which tend to decompose the size. The concentration of the size is important, for the greater the dissociation of the size in the milky state, the more chance is there of the fibers becoming com-



BROWN PAPER MILLS CO. employs 56 Hytors at Berlin, N. H.



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pletely surrounded with the size. E. Arnould. Le Papier, 1931, pages 1069 to 1073.

◆ Drying Paper and Felt

This article is concerned with the drying of paper and felts by means of warm air with the avoidance of vapors generated. A thorough investigation was made and various conditions were studied, such as the effect of these vapors on the drying process, devices for the removal of the vapors, lasting qualities of the drying felts, experiments on the papermaking machine, comparison of experimental installations, comparison of the economy of cylinder and warm air drying, as well as the advantages of the blowing in of warm air. Other subjects studied were the influence of the texture of the felt on the drying process, the drying of woolen felts on cylinder dryers, the relation between the time consumed in drying and the quantity of air and the moisture of the same, drying felts by means of a blast of hot air through the texture of the same, the influence of the air temperature on the time of drying, the economy of drying with hot air, etc.

The accompanying illustrations show two of the experimental installations used in this investigation. Fig. (1) shows an installation in which hot air is blown against the paper web and the drying felt. The points where hot air is used and directed against the paper web and felt are indicated by dots. Fig. (2) shows an installation in which hot air is used only for heating the drying felts, and the points at which the hot air blast is directed against the same are again indicated by dots. During the course of the experiments, the following conditions were determined:—the load on the papermaking machine in kilograms of dried paper, the water content of the paper before and after the dry end, the speed of the papermaking machine, the consumption of steam in the drying cylinders for drying the paper and the felt, the amount of air blown between the cylinders per hour, the temperature and the content of moisture in the air used for drying, the pressure of the air and the speed of its flow, the temperature and the moisture in the air after it emerges from the papermaking machine, the quantity of steam or heat required for the heating of the air and the consumption of power for operating the air blast. The experimental installation is shown in Fig. (3). In this diagram (A) is the air heater, (B) is the electric air heater, (C) is the inlet for fresh air, (E) is a valve for throttling the flow of air. The flow is measured and recorded by means of the precision instrument (F). The material that is to be dried is held in a stretched state at (G), which hangs on one arm of a precision balance (H). The points (X) represent thermometers and the points (Y) moisture determining instrument, while (Z) represents an air humidifying device. When textile weaves are being tested, they may be held in the frame (P) and the hot air passed through them.

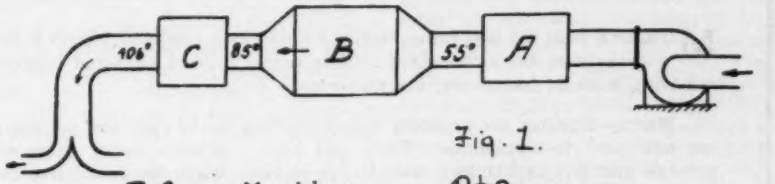
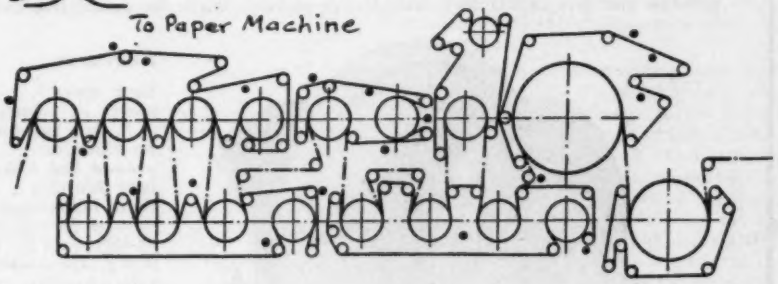
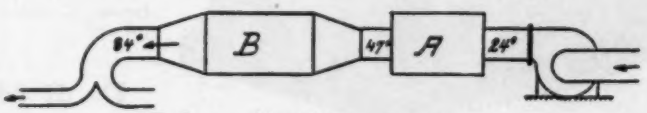
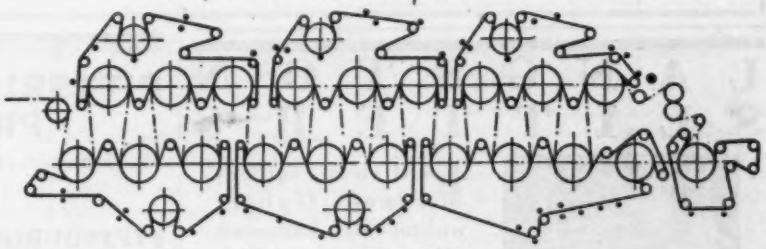


Fig. 1.





To Paper Machine Fig 2.



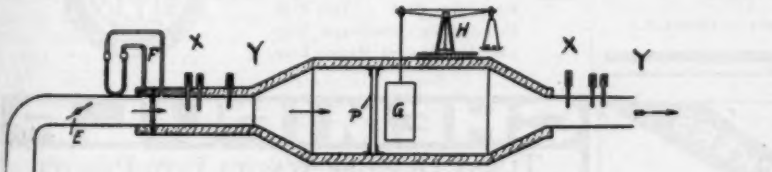
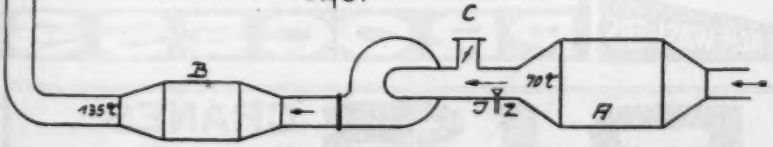


Fig 3.



A number of interesting results were obtained. The avoidance of moist vapors between the paper and felt webs in the machine leads to an increase in the output of paper. The economy of drying by means of hot air is always poorer than drying in the dry end of the papermaking machine. Drying felts with hot air is advantageous. Drying the felts by blowing hot air through them is more advantageous than drying on drums. Rheinhard Schulze. Der Papierfabrikant, 1931, pages 705 to 717.

◆ Preparation of Coating Material for Paper

Oleaginous seeds, such, for example, as soya bean, cottonseed, castor seed, tung nut and the like, preferably oil mill press cake, are ground and extracted, for example, with two liters of a half per cent calcium hydroxide solution per one hundred parts of meal at a temperature of 15 deg. C for about twelve hours. The separated liquor is then heated to a temperature of 50 deg. C. and its pH number of adjusted to 4 with the aid of dilute sulphuric acid, which is added to precipitate the protein. This is collected, washed, and dried at about a temperature of 32 deg. C. Other alkalies, such as sodium hydroxide or sodium sulphite, may be used in the preliminary extraction, but a subsequent prolonged treatment with dilute aqueous calcium hydroxide is necessary to modify the

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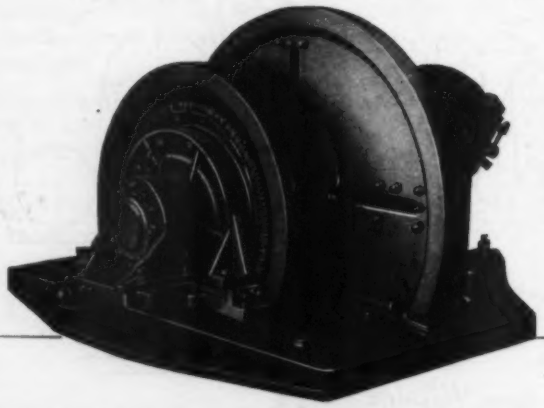

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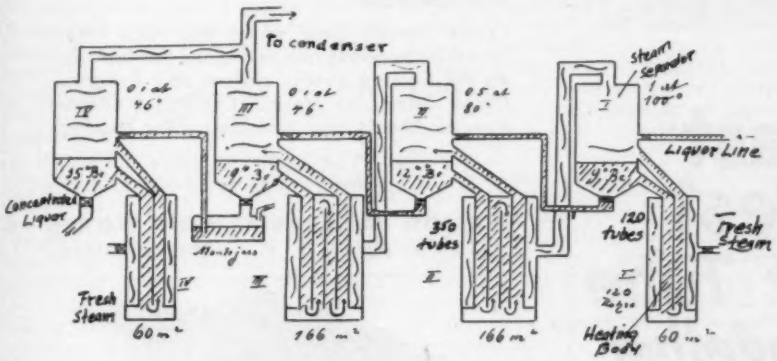
protein so that the dried product is readily dispersible in aqueous sodium carbonate, sodium borate, etc. These proteins are particularly suitable for coating mixtures, which contain satin white, since they are unaffected by the free lime. They are employed in making coated paper. I. F. Laucks. British Patent No. 356,287, filed April 17, 1930.

◆ Evaporation of Sulphite Liquors

A short history of the practice of evaporating sulphite liquor starts the article. The accompanying illustration shows a three-stage vacuum evaporating process, in which the vapors are used twice as heating media. There is included in



this installation a final evaporator which is used to bring the liquor rapidly to the necessary concentration. The temperature differential in this evaporator is great, and consequently it is fed with fresh steam, although it also operates under a vacuum. A thorough study has been made of the conditions under which this installation operates and the economy of the process is thoroughly investigated. The neutralized waste liquor is first preheated in a preheater fed with fresh steam and after this liquor has attained almost the boiling temperature, it is fed by means of a pump into the steam separator of unit 1 and then it flows into the heating apparatus. This apparatus consists of 120 iron tubes, which is surrounded externally with steam. The tubes are divided into two series. Through one series of pipes, the liquor runs down and through the other it rises and comes again into the steam separator. The process is repeated in the same manner in the other units of the installation. M. Sembritzki. Wochenblatt fuer Papierfabrikation, 1931, pages 809-811.

◆ Determining Degree of Delignification and Strength of Pulp

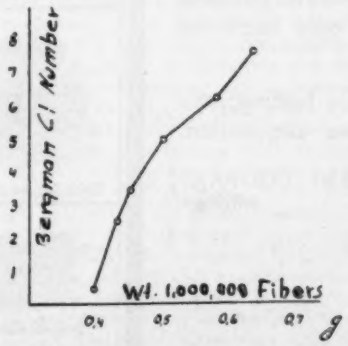
This important paper describes investigations carried out on various methods for determining the degree of lignification and the strength of various pulps. The relation between the Enso, Bergman, Tingle and Bjorkman coefficients is explained for different kinds of chemical pulp. The author also reviews the different analytical methods approved by the official associations in England and the United States, as well as Finland. Various determinations are carried out by these methods and the results are compared. C. K. Bergman. Pappers och Travarutiskrift foer Finland, 1931, numbers 11 and 15.

◆ Determining Cost of Power and Heat

This article is concerned with a method for the easy determination of the cost of power and heat in paper mills. The various important items in the cost are outlined and a formula is derived which can be used in the determination. Curves are shown by means of which the calculation of the cost is made easy. The method can be employed to advantage in determining whether one machine is operating more economically than another. The method has been tested and found to give accurate results. G. A. Matthaei. Der Papierfabrikant, 1931, pages 573ff.

◆ Effect of Sulphite Digestion on the Weight of the Fibers

The weight of the pulp fiber changes during the digestion process. A process has been worked out for determining the weight of the pulp fiber. A sample of the pulp is weighed out; the weight on the absolute dry basis should be around fifty milligrams. The sample is moistened with water and colored a deep blue with a solution of methyl violet. Then



the sample is brought into a measuring flask (flask A) and 200 cc. of distilled water are added. The flask is closed and the contents are shaken until the sample is completely disintegrated into fibers. This can be told by examining the sample against a light. Then the flask is filled to the mark and closed again. The fibers are distributed evenly in the liquor in the flask by turning the same upside down and shaking. Then the stopper is rapidly removed from the flask and a uniform flow of material is allowed to emerge and enter a 100 cc. measuring flask, and as soon as this vessel has been filled to the rim, the contents of the same are brought into another measuring flask of liter capacity (flask B). Two additional 100 cc. samples are taken from the flask B and brought into liter flasks (D) and (C). These flasks are shaken long enough to produce an evenly distributed mixture. Samples are then placed under a glass slide and examined against a piece of white paper.

The results obtained clearly show that the weight of the fibers constantly and quite uniformly decrease as the digestion progresses. A curve is shown herewith which is drawn with the Bergman chlorine coefficient as ordinates and the weight of one million fibers as abscissæ. This affords a very clear picture of the manner in which the weight of the fibers varies with the change in the degree of disintegration of the pulp. Thus as the chlorine coefficient decreases the weight of the fibers sharply reduces.

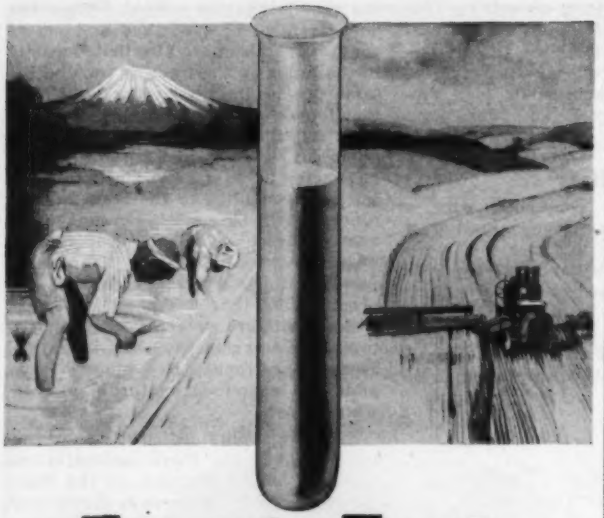
The experimental portion of the article contains a considerable mass of numerical data with respect to the tests made. A. Lampen and I. Koskinen. Zellstoff und Papier, 1932, pages 573 to 575.

◆ Two-Color and Multi-Color Effects on Paper

Colored designs in two and more color effects are obtained on paper during its production in the paper machine. A very slow stock colored in the desired manner is brought on the regular stock on the wire, and the two-ply web formed is subjected to high pressure in the wet part of the machine after it has passed the couch roll or during its passage. The result is that the top layer of slow stock is very intimately felted with the bottom layer, and the shifting of the colored fibers produces striking colored effects in the paper. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. German Patent No. 531,925.

◆ Cellulose From Pinewood by The Sulphite Process

Sulphite pulp is prepared from wood of high rosin content, for example, northern pine wood and hemlock, by treatment with ordinary bisulphite liquors, which contain added organic acids and sodium ions. These liquors are prepared by the addition of twenty-five per cent of a solution which is prepared by the precipitation of calcium from sulphite waste liquor by means of sodium sulphate. Wood from very old pine trees, resin twelve per cent and water 53.5 per cent, yields pulp of good quality but of slightly yellowish color. O. Routala and J. Sevon. Suomen Kem., 1931, volume 4, pages 49 to 50.



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The COMMERCIAL OUTLOOK

New York, January 2, 1932.

WHILE the past month has brought out little or nothing in the form of increased business to encourage paper manufacturers and distributors, it can be said that the new year begins with one very encouraging feature in the market situation; namely, the present position of paper prices. Within the last month some very important price adjustments have been made in several of the foremost classes of paper, and it is the opinion of those within the industry that prices now are on levels which can be viewed as rock bottom and which should lead to broader demand and general improvement in the market.

As leading members of the trade point out, prices of practically all kinds of paper now are on levels where consumers and converters should not hesitate for a moment to buy freely, not alone against current requirements but also to cover a good portion of their forward needs. There is no doubt that one of the salient reasons for the ultra-caution of buyers in recent months has been that they feared, in view of the tottering tone of the paper market and the dullness and uncertainty in business generally, prices of paper would react further downward, and their suspicions have been verified. The further reductions in mill prices are now expected to instill greater confidence in buyers and stimulate demand for paper, since it is believed consumers in most cases will regard the market as at the bottom and resume buying on a more normal scale than has marked their operations in some time. In fact, it can be stated that 1932 opens with more optimism existing in paper trade circles than has been noted in a lengthy while; that a consensus of opinion of paper men is that the worst of the depression has been seen and that before the new year is far on its way substantial improvement will be witnessed in business in general and in the paper market in particular.

Leading United States and Canadian producers of newsprint paper have cut prices $4 a ton, effective January 1, 1932. Announcement of the reduction was made early in December, the first rumors of the cut coming from Canada, followed soon after by official announcements from the Great Northern Paper Company, the International Paper Company and other large manufacturers. The new contract basis on standard newsprint in rolls is $53 per ton in New York and Chicago, while the price at Boston is $52.50 a ton; at Norfolk, Jacksonville, New Orleans and Houston $56, and at Atlanta and San Antonio $60.

A few days ago reductions ranging up to 10 per cent were announced in prices of rag-content fine papers by the foremost producers in New England and elsewhere throughout the country. This revision in mill quotations was taken, it is stated, after due deliberation on the part of manufacturers, who came to the conclusion that lower prices would stimulate consumption of such papers. Admission was made that repeated cuts in prices of sulphite bonds, ledgers and other fine papers, while quotations on rag-content papers were maintained, had resulted in a too wide spread between costs of the two groups of fine papers, to the detriment of rag papers. Consequently the reduction in papers of rag-content was determined upon in order to bring prices more in line with competing sulphite papers, and rag paper manufacturers are expecting an appreciable increase in the movement of their product.

Production of paper in the United States in October showed a tonnage increase, according to identical mill reports to the American Paper and Pulp Association. A total of 437,196 net tons of paper of all kinds was produced in October, compared with 422,922 tons in the preceding month, though the daily average output in October was 5 per cent under that of September last year and 9 per cent below the October, 1930, production. Shipments from mills during October aggregated 442,280 tons, or in excess of the current output, and comparing with 424,831 tons shipped in the preceding month, while stocks at mills at the end of October totaled 252,547 tons, against 257,604 tons a month earlier. Paper production in the first ten months of 1931 reached a total of 4,380,258 tons, contrasted with 4,837,830 tons produced by identical mills in the corresponding period of 1930, the Association's records show.

Newsprint production in the United States in November amounted to 94,149 tons and shipments from mills were 93,723 tons, while production in Canada was 175,643 tons and shipments 173,601 tons, making a combined total for the two countries of 269,792 tons produced and 267,324 tons shipped, compared with a production of 281,369 tons and shipments of 290,341 tons in the preceding month, according to the News Print Service Bureau. During November, 23,987 tons of newsprint were manufactured in Newfoundland and 826 tons in Mexico, so that the total North American output for the month reached 294,605 tons. The Canadian mills produced 286,247 tons less newsprint in the first eleven months of 1931 than in the same period of 1930, which was a decrease of 12 per cent, while the output in the United States in the similar time was 118,218 tons or 10 per cent less than in 1930. During November the Canadian newsprint mills operated at 56.8 per cent of rated capacity and the United States mills at 65.6 per cent. Stocks of newsprint at Canadian mills at the end of November were 48,735 tons, and at U. S. mills 32,398 tons, making a combined total of 81,133 tons, which was equivalent to 4.5 days' average production.

Production of paperboard in the United States amounted to 218,157 net tons in October last, contrasted with 221,684 tons in the preceding month and 253,889 tons in the similar month of 1930, making a total output for the first ten months of last year of 2,206,536 tons, against 2,321,540 tons in the same period of 1930, according to U. S. Department of Commerce compilations. New orders for board received by mills in October called for 218,527 tons, compared with 235,382 tons in the preceding month, and unfilled orders held by manufacturers at the end of October were for 61,365 tons, against 61,327 tons a month previously. Shipments of board from mills during October aggregated 218,489 tons, contrasted with 221,261 tons in September, and stocks at mills at the end of October were 79,248 tons, against 79,580 tons a month before.

Some recessions in quotations on book paper have been recorded, and it is reported that machine finished book paper can be bought on a delivered basis against contracts at 4.50 cents a pound New York, and perhaps at slightly less in exceptional instances. Wrapping paper prices are still unsettled though no further downtrend of a definite character has been noted. Mills in some cases are granting additional concessions on the cheaper lines of bonds and ledgers; in fact, it is said that buyers are getting sulphite papers at attractively low costs and frequently under the prices recognized as prevailing quotational levels.

There are reports of further price-cutting in boxboards. Generally, the quotation named in the East is $22 per ton for plain chip and news boards delivered New York, but there is talk of purchases down to as low as $20. The board market is very quiet and the fact that manufacturers are seeking orders lends substantiation to the rumors of cheaper prices. A little increase in demand for roofing and building papers is reported, yet business in these lines is so under normal that it scarcely bears comparison.

❖ ❖ ❖

◆ DR. C. A. SCHENCK, formerly director of the Biltmore Forest School, Biltmore, N. C., has made a special arrangement with the North German Lloyd Steamship Company for an American Forester's Tour of Europe. The party will sail from New York, April 21, 1932, on the S.S. Berlin and return from Southampton on the Europa June 13. The cost of the tour will be $480. Information and reservations can be obtained from any North German Lloyd office.

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Domestic RAW MATERIALS

◆ Papermaking Rags

The market for papermaking rags has experienced spells of quietness in the past but it is doubtful whether it has ever before known such a degree of dullness as during the last few weeks. Demand for rags from paper mills has been very close to a standstill. Manufacturers have evinced very little interest in any grade or kind of rag, and have confined their purchases to small quantities to satisfy urgent requirements. Dealers, having become discouraged in their efforts to persuade mill customers to take advantage of the low market prices prevailing, have lately adopted a waiting policy and have not pressed their offerings while realizing that to do so would avail them nothing in the way of increased business with mills.

December is proverbially a slow period for papermaking rags because consumers in general remain aloof from the market while more intent on keeping stocks down for year-end inventories. The final month of 1931 was even quieter than ordinarily, however, since papermakers almost without exception were bent on reducing stocks of raw material to a minimum so as to end the year in as liquid a position as possible. Rag dealers are hopeful that the reduction in prices of rag-content papers, thereby bringing costs of such papers more in line with sulphite bonds, ledgers and other competing lines, will lead to a broader movement of rag papers and in time result in a larger demand from paper mills for rags. At any rate, it is argued that the lower paper prices cannot but eventuate in some increased consumption of rags, and bring manufacturers into the market for at least larger amounts of rags than they have bought recently.

The very limited call for supplies has resulted in a further sagging of prices of certain grades of rags. New cotton cuttings have displayed especial easiness, and some of the old rags have declined to cheaper price levels. About the only class of stock that has shown any activity at all has been roofing rags. Mill buyers of these have operated on a fair scale in some instances and have absorbed most of the supply offered, so that prices of roofing stock exhibit relative steadiness. No. 1 domestic roofing or cloth strippings are reported bringing 65 cents and slightly higher per hundred pounds f.o.b. shipping points, and No. 2 packing of classification roofing 45 to 50 cents a hundred. Foreign roofing rags are in limited demand with offerings of dark colored cottons on a price level of 60 cents a hundred pounds ex dock American Atlantic ports said to be going begging.

So few transactions of any consequence have been recorded in new cuttings that prices lack a basis and are strictly nominal. There have been reports of sales of No. 1 white shirt cuttings at 4.50 cents a pound at dealers' points though most quotations to mills range well above this level. Washables and fancy shirt cuttings are very weak, and only buyers can ascertain with any accuracy at what prices such rags can be bought. New unbleached muslins have been in some demand and are reported priced at about 5.75 to 6 cents a pound f.o.b. shipping points.

Old white cottons and thirds and blues have been in a dormant position and are very uncertain in price. However, it is quite likely that the few lots that have been taken by paper mills have been secured at low prices, certainly at the bottom edges of quotational ranges and perhaps at even less. Foreign rags of all grades have been little wanted, and prices are nominal. Importers are stressing the fact that they are unable to buy abroad at costs in keeping with nominal market levels on this side, and assert that if paper manufacturers should find themselves in need of such rags they doubtless would have to grant higher prices to induce shippers in Europe to sell.

Average quotations f.o.b. shipping points and ex dock New York, many of which should be considered nominal, follow:

NEW STOCK

	New York and Chicago
White shirt cuttings, No. 1	4.50-4.75
White shirt cuttings, No. 2	3.25-3.50
Fancy shirt cuttings	1.50-1.75
Washables, No. 1	1.50-1.75
Unbleached muslins	5.75-6.00
White lawns	3.50-3.75
Overall cuttings, blue	4.25-4.50
Black silesias	2.25-2.50
Canton flannels, bleached	5.00-5.25
Canton flannels, unbleached	4.25-4.50
Shoe cuttings, bleached	4.50-4.75
Shoe cuttings, unbleached	4.00-4.25
Light silesias	4.00-4.25
O. D. khaki cuttings	4.00-4.25
Mixed khaki cuttings	3.50-3.75
Corduroy cuttings	2.25-2.50
Cottonade cuttings	1.75-2.00
Linens, No. 1 white, foreign	7.00-7.50
Light prints, foreign	2.25-2.50

OLD STOCK

Whites, No. 1, repacked	3.00-3.50
Whites, No. 2, repacked	1.75-2.00
Whites, house soiled	1.40-1.60
Whites, street soiled	1.20-1.40
Thirds and blues, rough	.65- .80
Thirds and blues, repacked	1.20-1.40
Lace curtains	2.75-3.00
Black stockings	1.75-2.00
Cotton canvas, No. 1	3.00-3.25
White cotton batting	1.00-1.25
Roofing, No. 1 (cloth strippings)	.60- .70
Roofing, No. 2	.40- .50
Linsey garments, foreign	.70- .75
Dark colored cottons, foreign	.55- .60
Blue linens, foreign	2.75-3.00
Gray linens, foreign	3.00-3.25
White linens, foreign	4.75-5.00
Light prints, extra foreign	1.75-2.00

◆ Rope and Bagging

A quiet market exists for old rope and bagging and prices have reacted to lower levels in some instances. Bagging values in particular show weakness. Dealers report that No. 1 scrap bagging is available to paper mills at 80 cents per hundred pounds f.o.b. shipping points and that in all probability this price could be shaded, while old gunny bagging has declined to where No. 1 quality material is said to be offered by sellers at a cent per pound or very close to that figure at points of shipment. Some few sales of scrap wool tares have been reported but at low prices.

Quotations on old rope show scant change but a very dull market has persisted and mill buyers have been occasioned no difficulty in getting all the supply wanted and at about their own figures. Domestic No. 1 old manila rope is on a price level of 1.50 to 1.75 cents per pound at dealers' shipping points, and the imported article is quoted at the same prices. Old strings of every description are in slow demand, and uncertain in price.

F.o.b. shipping point and ex dock New York quotations follow:

Gunny, No. 1 domestic	1.00-1.15
Gunny, No. 1 foreign	1.00-1.15
Scrap bagging, No. 1	.80- .90
Roofing bagging	.35- .40
Wool tares, heavy	1.00-1.15
Wool tares, light	1.00-1.10
Manila rope, No. 1 foreign	1.50-1.75
Manila rope, No. 1 domestic	1.50-1.75
Sisal strings	1.25-1.50
Mixed strings	.60- .70

◆ Old Paper

Demand for old paper has slowed down very perceptibly and while market prices in the Middle West have held relatively steady, values in the eastern markets, notably New York, have figuratively crashed on some grades. Low grades of waste paper are reported available in the East at surprisingly low costs; in fact, reports say that in some instances dealers have implored consuming mills to take specific lots of stock off their hands at no cost at all except the freight on shipments. High grades as well as the low qualities have figured in the market's decline in the East, and are now selling at the lowest prices that have been seen in a long while.

No. 1 mixed paper is said to be available at $2 a ton f.o.b. New York, although above this price generally is demanded while the market basis in the West is $5 to $6 a ton. Folded news is down to 25 cents per hundred pounds in the East f.o.b. shipping points, container manilas to 25 cents, and old corrugated boxes to 30 cents. Soft white shavings of No. 1 quality are reported available in some quarters at 1.60 cents a pound, and probably at less, while prices of No. 1 old kraft paper have receded to 90 cents per hundred pounds. Book stock has held comparatively steady in value, with No. 1 heavy book fetching 65 to 70 cents a hundred pounds and crumpled books 50 to 55 cents.

The following are quotations f.o.b. shipping points:

	New York and Chicago
Hard white shavings, No. 1	1.90-2.25
Hard white shavings, No. 2	1.70-1.90
Soft white shavings	1.50-1.75
Colored shavings	.50- .60
Heavy book, No. 1	.65- .75
Crumpled book, No. 1	.50- .60
Ledger stock	.60- .90
Kraft, No. 1	.90-1.00

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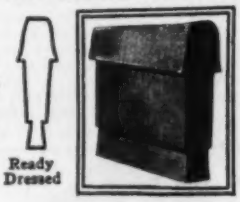

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New kraft cuttings	1.40-1.50
White blank news	1.40-1.50
Manilas, No. 1	.35- .50
Manilas, container	.25- .35
Folded news	.25- .40
Sulphite mill wrappings	.35- .50
Old corrugated boxes	.30- .40
New corrugated box cuttings	.40- .50
Mixed paper, No. 1	.15- .30
Common paper	.10- .20

◆ Pulpwood

Reports tell of a decidedly slack demand for pulpwood and of market prices falling to new low levels. Pulp manufacturers in a great majority of cases appear to have their requirements supplied and are manifesting little disposition to augment their commitments. Prices are largely a nominal matter, depending on the location of the wood, the eagerness of sellers to dispose of supplies, and other factors.

◆ Mechanical Pulp

There are indications of a little firmer tone in prices of imported groundwood of Scandinavian origin, more especially dry pulp, but the position of domestic and Canadian groundwood is weak decidedly. Some of the prices rumored at which purchases have been accomplished in Canada seem almost unbelievable. Generally domestic producers are endeavoring to get in the vicinity of $23 to $25 a ton f.o.b. grinding mills for prime groundwood for prompt shipment, and while Canadian manufacturers are reported asking around $20 a ton at shipping points, it is said that purchases have been made—probably of so-called "distress" pulp—down as low as $16 a ton at producing plants. Certainly, prices are all in favor of buyers, and only buyers themselves can ascertain exactly how cheaply supplies can be acquired.

Production of groundwood in the United States in October amounted to 68,112 net tons, compared with 62,998 tons in the preceding month, according to identical mill reports to the American Paper and Pulp Association. Stocks at mills at the end of October totaled 49,616 tons, against 53,369 tons a month earlier.

◆ Chemical Pulp

Dullness is the outstanding characteristic of the market for domestic chemical pulp, and very little business of importance is reported in any corner of the trade. Occasionally consumers come into evidence to buy limited tonnages of certain kinds of pulp, and recently contracts for 1932 supplies have been arranged, but the market has been otherwise just about devoid of life. Prices are uncertain, and in favor of those on the buying side. West coast bleached sulphite has been reported offered at 2.25 cents a pound ex dock Atlantic seaboard, and even at below this price, while in other grades of domestic pulps, producers have found it necessary to readjust prices on a lower level to compete with imported pulp. News grade unbleached sulphite is down around 1.90 cents or less per pound at producing mills, and bleached soda pulp is reported available at 2.65 to 2.75 cents delivered paper mills. Kraft pulp is on a broad price range, depending on the quality and source of the particular pulp concerned.

Mills in the United States produced a total of 92,141 net tons of chemical pulp in October, against 90,688 tons by identical mills in September last, according to the American Paper and Pulp Association. Stocks at producing mills at the end of October amounted to 17,887 tons, contrasted with 19,965 tons a month previously.

Quotations f.o.b. pulp mills are as follows:

Bleached sulphite	2.15-4.50
Easy bleaching sulphite	2.00-2.25
Unbleached sulphite, No. 1 strong (new grade)	1.80-2.00
Unbleached sulphite, No. 1 book	1.90-2.10
Soda pulp bleached (delivered)	2.60-2.75
Mitscherlich, unbleached	2.25-2.50
Kraft	1.75-2.50
Screenings, refined	(Nominal)

◆ Chemicals

Contracting for 1932 supplies has been going on of late but otherwise the market for pulp and papermaking chemicals has ruled quiet. Transient demand, in fact, has been at a very low ebb. Prices as quoted show no important changes though the slight revisions made have been downward almost without exception. Bleaching powder quotations hold to a range of 1.75 to 2 cents per pound in drums f.o.b. works, while caustic soda is quoted at 2.50 to 2.55 cents a pound for the solid product for spot delivery, and soda ash is 1.15 to 1.25 cents a pound for the 58 per cent light ash packed in bags.

Average quotations are as follows:

Alum, lump ammonia	3.50- 3.75
Alum, lump starch	3.75- 4.00
Blanc fixe, powdered	3.75- 4.00
Bleaching powder	1.75- 2.00
Brimstone (long ton, at mine)	18.00-20.00
Casein (duty paid)	7.50- 9.50
Caustic soda, solid, spot delivery	2.50- 2.55
China clay, domestic washed	7.00-11.00
China clay, foreign	11.00-15.00
Rosin	3.90- 4.00
Satin white	2.00- 2.25
Soda ash, 58 per cent light (bags)	1.15- 1.25
Starch, papermaker's, in bags	2.62-
Talc (ton)	14.00-18.00

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◆ Ralph M. Snell Leaves Paper Makers' Chemical Corp.

Ralph M. Snell has terminated his connection with the Paper Makers' Chemical Corporation as general manager of the Holyoke, Mass., office and factory, in which he has been interested financially since the period of the World War, being vice president of the corporation. When quite young—he is now in his fifty-sixth year—Mr. Snell was initiated into the mysteries of papermaking at the mill of the Indiana Paper Company in South Bend, Ind., where his family had removed from Marysville, Ohio, when he was four years old. He later worked for the Worthy Paper Company Association in Mittineague, Mass., and going to Holyoke was associated for some time with the Chemical Paper Manufacturing Company, becoming an expert papermaker. It was here that he became acquainted with C. H. Knight, then assistant to George Noble, chemist at the mill. In 1907, Mr. Noble started the Paper Makers' Chemical Company to manufacture alum and rosin size, and this was the beginning of the Paper Makers' Chemical Corporation which now has branches and factories all over the United States, one branch in Canada and another in England.

Mr. Snell has made a special study of sources of China clay in this country and he wrote several articles dealing with the characteristics and properties of American clays used in papermaking which appeared in the paper industry periodicals. He is possessed of a historical bent of mind and has occupied himself for the past five years with the production of historical sketches of pioneer American papermakers which have been published in "Superior Facts," house organ of the Paper Makers' Chemical Corporation, of which he is the editor.

◆ Chemical Societies Organize to Aid Unemployment

The following associations have opened registration headquarters at the Chemists' Club, 50 East 41st Street, New York City, where unemployed chemists and chemical engineers may register and be assigned to employment as fast as positions are found.

Col. T. H. Murphy is chairman of the volunteer committee organized by the Employment Bureau of the Chemists' Club, which is sponsored by American Chemical Society (New York Section), American Institute of Chemists, American Institute of Chemical Engineers, American Electrochemical Society, Association of Consulting Chemists & Chemical Engineers, Inc., Société de Chimie Industrielle (American Section), Society of Chemical Industry (American Section), Frank G. Breyer, executive secretary.

The Advisory Committee consists of Dr. Leo H. Baekeland, Bakelite Corporation; Horace Bowker, American Agricultural Chemical Company; Francis P. Garvan, Chemical Foundation; Dr. Chas. H. Herty, Pharmaceutical Association; Dr. D. D. Jackson, Columbia University; Dr. Wm. J. Schieffelin, wholesale drugs, and Dr. Maximillian Toch, Standard Varnish Works.

All chemists and chemical engineers out of employment may call and register, whether or not members of any society, stating their qualifications and necessities. They will be classified and notices will be sent to industries not now employing chemists but which should employ process men. This service is free to the profession. Registrants are requested to call at Chemists' Club, 50 East 41st Street, any week day between 9 a. m. and 5 p. m.

◆ NEW OFFICES have been established in Cincinnati by Merco Nordstrom Valve Company, to be located in the Chamber of Commerce building. The Charleston, W. Va., office is being closed.

◆ THE FALK CORPORATION, Milwaukee, announces a new schedule of lower prices on its line of speed reducers. Price changes apply to all sizes in common use.

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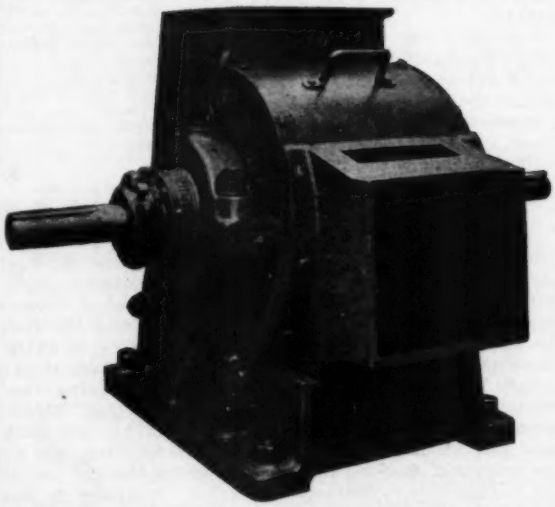

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Import and Export MARKETS

EXPORTS

In point of total value, exportations of paper and paper products from the United States in October showed an increase over the preceding month but were below the value of shipments in the same month of 1930. According to official figures compiled and issued by the U. S. Department of Commerce, total exports in October reached a value of $1,756,519, contrasted with $1,633,950 in September last and $2,362,464 in October, 1930. Exports of paper during the first ten months of 1931 aggregated in value $19,130,046, against $26,257,038 in the corresponding period of 1930.

Newsprint exports in October amounted to 2,058,049 pounds of a declared value of $58,443, compared with 1,645,876 pounds of a value of $61,787 shipped in the same month of 1930. Exports of uncoated book paper in October were valued at $71,692, against $138,873 in the same month of 1930, while wrapping paper exports decreased from a value of $213,335 in October, 1930, to $161,405 in October last. Writing paper exportations were valued at $102,022 in October, against $155,439 in the same month of 1930, and tissue paper exports reached a value of $38,300 last October, contrasted with $77,586 in the previous similar month. Exports of paper bags in October were valued at $63,514, against $90,685 the preceding year, while paper box exports were valued at $72,331 last October, compared with $86,304 in October, 1930.

Exports of box board in October were of a declared value of $64,650, against $100,020 a year before, and other paper board exports were valued at $133,740, showing an increase over the $117,350 worth exported in October, 1930.

IMPORTS

◆ Wood Pulp

The feature in the imported wood pulp situation in recent weeks has been the rather heavy arrivals of supplies from abroad. Steamer after steamer has reached the several United States Atlantic ports where pulp is received with big tonnages of sulphite and kraft pulp in their cargoes, and the fact that receipts have been so large probably accounts in part for the quiet market that now prevails. These arrivals of pulp from abroad have not been unusual for this period of the year since they represent in good measure last open water shipments from Scandinavia against contracts and orders placed by American consumers some while back.

However, the influx of supplies has enabled paper manufacturers to refrain from additional purchasing, and a quiet current market has existed. Most pulp consumers are now manifesting little or no disposition to augment their commitments. Some are said to be inclined to contract for far-off deliveries, evidently figuring that market prices are about as low as they will go and that the present is a favorable time to anticipate requirements, but producers abroad are not willing to sell far ahead at prevailing market prices and consequently it is understood that limited forward business is transpiring. There is, of course, a certain amount of routine trading, with buyers now and then coming into evidence to cover urgent wants, and mostly from spot stocks of pulp, but the market as a whole is quiet indeed and rather on the easy side quotably.

It is difficult to ascertain precisely what market price levels are at the moment. Gyrations in exchange are a factor making for much uncertainty in quotations, and then, too, there are some sellers who are exerting at least some pressure and who exhibit a tendency to shade prices, so that values are quite irregular, more especially on sulphite pulps. Kraft is relatively steadier with importers and agents holding to a quotable level of 1.50 cents a pound ex dock American Atlantic ports for prime Scandinavian kraft of standard quality, and $2 to $4 a ton higher for extra brands. Foreign prime bleached sulphite is reported available at 2.25 cents a pound and probably at a little less, while strong unbleached sulphite of prime grade is offered at 1.65 cents ex dock and in all likelihood can be bought at slightly under this price. Groundwood of foreign origin is quoted at $23 to $24 per short ton ex dock for dry pulp.

While holding up to above the average monthly importations during the first nine months of last year, imports of chemical wood pulp into the United States in October were a little under the tonnage imported in the preceding month. According to official statistics issued by the U. S. Department of Commerce in Washington, total imports of chemical pulp of all grades in October amounted to 100,910 long tons, valued at $4,325,012, against 109,001 tons of a value of $4,668,208 in September last, and 94,124 tons of a value of $4,956,959 in October, 1930. The October imports brought the total for the first ten months of 1931 up to 982,784 tons, contrasted with 1,089,239 tons during the same time of 1930.

Groundwood imports in October totaled 19,502 long tons, valued at $426,473, against 16,741 tons of a value of $379,978 in the preceding month and 27,951 tons of a value of $724,525 in the same month of 1930, making a total of 148,988 tons in the first ten months of last year, compared with 223,621 tons in the similar period of 1930.

Current market quotations ex dock New York, and receipts at the port of New York during December, 1931, these data being taken from manifests of vessels reaching that port last month, follow:

Bleached sulphite, No. 1	2.15- 3.50
Unbleached sulphite, strong No. 1	1.60- 1.75
Unbleached sulphite, No. 2	1.50- 1.60
Easy bleaching sulphite	1.80- 2.00
Mitscherlich, unbleached, genuine	2.25- 2.50
Mitscherlich, unbleached, ordinary	1.75- 1.90
Kraft, standard Swedish	1.50- 1.75
Groundwood, per ton (dry)	23.00-24.00

Lagerloef Trading Co., 1,512 bls. from Tolkis, 2,494 Helsingfors, 2,400 Kemi, 4,081 Raumo and 200 Wiborg; E. M. Sergeant Co., 2,294 bls. from Gothenburg; Guaranty Trust Co., 1,338 bls. from Gothenburg; Castle & Overton, 4,018 bls. from Hamburg, 460 Rotterdam and 495 Wiborg; Chemical Bank & Trust Co., 700 bls. from Hamburg; M. Gottesman & Co., 2,850 bls. from Gothenburg and 6,750 Iggesund; Bulkley, Dunton & Co., 2,160 bls. from Gothenburg, 2,375 Iggesund, 500 Soderhamn and 18,000 Stugsund; Johaneson, Wales & Sparre, 680 bls. from Gothenburg, 170 Hamburg, 5,455 Sundsvall and 2,625 Obbola; Price & Pierce, 900 bls. from Gothenburg, 2,700 Hernosand, 900 Svano and 11,400 Orviken; Russel McCandless, 300 bls. from Gothenburg; First National Bank of Boston, 342 bls. from Hamburg; Stora Kopparberg Corp., 1,150 bls. from Skutskar; Brown Bros. & Co., 4,265 bls. from Wifstavarf, 2,650 Sundsvall and 265 Gothenburg; J. Andersen & Co., 3,150 bls. from Svano, 6,900 Hernosand, 1,925 Oslo and 250 Gothenburg; Bonaventure Pulp and Paper Co., 12,329 bls. from Chandler, Que.; E. J. Keller Co., 1,465 bls. from Hamburg; Irving Trust Co., 1,125 bls. from Bremen; Pagel, Horton & Co., 4,500 bls. from Gefle; Robert Gair Co., 3,345 bls. from Bridgewater, N. S.; Parsons & Whittemore, 630 bls. from Gothenburg and 900 Sundsvall; Perkins-Goodwin Co., 17,500 bls. from Obbola; A. P. W. Paper Co., 6,649 bls. from Sheet Harbor, N. S.; Order, 1,724 bls. from Hamburg, 768 Wiborg, 47,100 Hernosand, 15,000 Norrsundet and 407 Bremen.

◆ Paper Stock

Imports of papermaking rags into the United States in October last amounted to 9,269,292 pounds, valued at $116,703, making a total for the first ten months of 1931 of 102,030,623 pounds of a declared value of $1,377,771, compared with 258,181,830 pounds of a value of $5,115,653 imported in the similar period of 1930, according to official figures issued by the U. S. Department of Commerce. Imports of all other paper stock excepting wood pulp during the first ten months of last year reached 93,465,998 pounds, valued at $1,315,812, against

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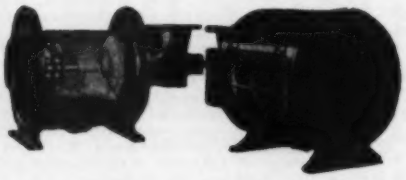

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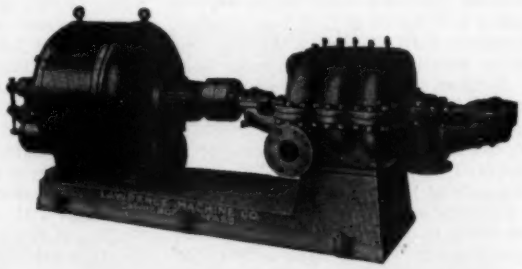

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203,687,425 pounds of a value of $2,739,491 in the corresponding time of 1930.

Paper stock importations continued on a light scale during December, judging from receipts through the port of New York. Arrivals of papermaking materials of all kinds at that port last month, these data being taken from manifests of steamers reaching New York during the month and therefore unofficial, were as follows:

Old Rope—International Purchasing Co., 182 rolls, 14 bls. and 169 coils; William Steck & Co., 142 coils; Brown Bros. & Co., 213 coils; Banca Commerciale Italiana Trust Co., 115 coils; S. Birkenstein & Sons, 55 coils; J. J. Keegan, 45 coils; Order, 146 coils.

Old Bagging—Darmstadt, Scott & Courtney, 406 bls.; Bank of New York & Trust Co., 117 bls.; Castle & Overton, 85 bls.; Irving Trust Co., 36 bls.; T. D. Downing & Co., 105 bls.; Order, 68 bls.

Rags—E. J. Keller Co., 464 bls.; William Steck & Co., 105 bls.; Ernst Mayer, 4 bls.; J. Reiss & Co., 15 bls.; C. Nelson, 42 bls.; Victor Galaup, Inc., 129 bls.; J. Cohen & Son, 40 bls.; Bank of New York & Trust Co., 152 bls.; New York Trust Co., 55 bls.; First National Bank of Philadelphia, 75 bls.; Banca Commerciala Italiana Trust Co., 20 bls.; Order, 485 bls.

Miscellaneous Paper Stock—Castle & Overton, 344 bls.; J. Cohen & Son, 12 bls.; F. J. Fawcett, 10 bls.; E. J. Keller Co., 370 bls.; S. Birkenstein & Sons, 114 bls.; Darmstadt, Scott & Courtney, 111 bls.; Chase National Bank, 18 bls.

◆ Paper

Imports of paper into the United States during October showed an increase in value as compared with the month before but were substantially under the value of imports in the same month of 1930. According to official statistics compiled by the U. S. Department of Commerce, imports in October were valued at $10,660,058, against $9,423,384 in September last year and $13,259,907 in October, 1930. Imports during the first ten months of 1931 aggregated in value $105,950,160, contrasted with $122,978,285 in the corresponding period of 1930.

Paper imports in December were rather light, judging from receipts through the port of New York. Arrivals of all kinds of paper through that port last month, these data being taken from manifests of arriving vessels and therefore unofficial, were as follows:

Printing—Jay Madden Corp., 103 reels from Hamburg; Stora Kopparberg Corp., 159 reels from Gothenburg; G. Henschel & Co., 6 cs. from Hamburg; Baldwin Paper Co., 110 rolls from Hamburg; Perkins-Goodwin Co., 1,433 reels from Hamburg and 335 reels Bremen; P. C. Zuhlke, 32 cs. from Antwerp; E. Dietzgen & Co., 139 cs. from Rotterdam and 11 cs. Hamburg; Keuffel & Esser Co., 9 cs. from Hamburg; Manufacturers Trust Co., 64 bls. from Hamburg; International Forwarding Co., 16 cs. from Antwerp and 30 cs. Rotterdam; W. H. Bell, 10,733 rolls from Liverpool, N. S.; International Paper Co., 2,957 rolls from Dalhousie, N. B.; Bank of Montreal, 3,357 rolls from Corner Brook, N. F.; Lunham & Reeve, 874 rolls from Kotka; Public National Bank, 8 cs. from Marseilles; Boyd, Wier & Sewell, 304 reels from Hamburg; C. Steiner, 12 rolls and 11 bls. from Rotterdam; W. I. Newberry, 6 cs. from Southampton; F. L. Kraemer & Co., 360 bls. from Gothenburg and 31 cs. Bremen; Order, 553 rolls from Kotka, 672 rolls and 17 cs. Hamburg, 435 reels Oslo and 1,743 reels Bremen.

Wrapping—E. Dietzgen & Co., 18 cs. from Rotterdam; Borregaard Co., 354 reels and 115 bls. from Gothenburg; Sylvania Industrial Corp., 24 cs. from Antwerp; C. Steiner, 10 cs. from Hamburg.

Cigarette—American Tobacco Co., 1,050 cs. from Bordeaux and 750 cs. Havre; Standard Products Corp., 13 cs. from Antwerp, 25 cs. Southampton and 277 cs. Havre; G. A. Henshaw & Son, 55 cs. from Southampton, 20 cs. Liverpool, 5 cs. Genoa and 52 cs. Havre; Southern Pacific Lines, 3 cs. from Southampton; P. J. Schweitzer, Inc., 17 cs. from Marseilles; Champagne Paper Corp., 720 cs. from Havre; De Mauduit Paper Corp., 2,521 cs. from St. Nazaire; Gluckmann & Straunch, 3 cs. from Havre; M. Spiegel & Sons, 6 cs. from Barcelona and 10 cs. Hamburg; Order, 9 cs. from Genoa, 2 cs. Marseilles and 2 cs. Havre.

Writing—Globe Shipping Co., 5 cs. from Havre; De Picciotto, 19 cs. from Havre.

Filter—H. Reeve Angel & Co., 66 cs. from Southampton and 13 cs. London; E. Fougera & Co., 30 cs. from Southampton; Gerhard & Hey, 41 cs. from Southampton; Coupey Fils, 10 bls. from Marseilles; C. Sleicher & Scholl, 8 cs. from Hamburg; A. Giese & Son, 10 cs. from Hamburg and 61 bls. Southampton; J. Manheimer, 80 bls. from Southampton.

Tissue—W. J. Byrnes & Co., 4 cs. from Southampton and 5 cs. Liverpool; H. Lange, 20 bls. from Bremen; Schwarz Paper Co., 3 cs. from Liverpool; Parsons & Whittemore, 3 cs. from Liverpool; Order, 10 bls. from Kotka and 4 cs. Southampton.

Drawing—Keuffel & Esser Co., 73 cs. from Hamburg and 7 cs. Southampton; H. Reeve Angel & Co., 8 cs. from London; G. W. Sheldon & Co., 2 cs. from Havre; National City Bank, 17 cs. from Rotterdam.

Photo—Globe Shipping Co., 284 cs. from Bremen; Gevaert Co. of America, 232 cs. from Antwerp; J. J. Gavin & Co., 11 cs. from Southampton; J. H. Schroeder Banking Corp., 3 cs. from Bremen.

Hanging—Irving Trust Co., 13 cs. from Hamburg; F. J. Emmerich & Co., 152 bls. from Hamburg, 33 bls. Liverpool, 3 cs. Havre and 2 bls. London; Globe Shipping Co., 21 bls. from Hamburg; American-Hawaiian Steamship Co., 2 bls. from London; Panama-Pacific Line, 2 cs. from London; R. F. Downing & Co., 3 cs. from Southampton and 30 bls. London; J. E. Bernard & Co., 2 bls. from London; Kensington Wallpaper Co., 3 bls. from Havre; Universal Carloading and Distributing Co., 8 bls. from Bremen and 20 cs. Hamburg; W. H. S. Lloyd & Co., 2 bls. from Havre; Guaranty Trust Co., 22 cs. from Hamburg; C. A. Haynes & Co., 41 bls. from London; C. Grimmer, 2 bls. from Bremen; F. C. Binder, 8 bls. from Bremen; Order, 12 cs. from London.

Cover—Hensel, Bruckman & Lorbacher, 132 cs. from Hamburg and 8 cs. Bremen; Winter, Wolff & Co., 3 cs. from Antwerp; Taub, Hummel & Schorsh, 16 cs. from Hamburg; Globe Shipping Co., 33 cs. from Bremen and 36 cs. Hamburg.

Board—A. C. Rempert, 33 cs. from Antwerp; Lagerloef Trading Co., 233 bls. from Hamburg and 54 bls. Kotka; J. Cornet, 5 cs. from Southampton; Coty, Inc., 29 cs. from Havre; S. Feldman, 3 cs. from Hamburg; Thurnauer & Co., 10 cs. from Antwerp; Colman Paper Co., 10 cs. from Antwerp; Treetex Corp., 6 cs. from Gothenburg; C. W. Sellers, 2 cs. from Havre; Order, 65 cs. from Bremen.

Miscellaneous—Japan Paper Co., 3 cs. from Southampton, 2 bls. Gothenburg, 84 cs. Kobe, 6 cs. London and 6 cs. Rotterdam; C. Bruening, 106 rolls from Rotterdam; T. Johnson, 7 cs. from Gothenburg; T. N. Fairbanks, 8 cs. from Genoa; B. F. Drakenfeld & Co., 38 cs. from Liverpool; Keller-Dorian Paper Co., 7 cs. from Southampton and 12 cs. Havre; Happel & McAvoy, 7 cs. from Hamburg; D. F. Young, 2 cs. from Southampton and 5 cs. London; F. Murray Hill, Inc., 17 cs. from Bremen and 13 cs. Hamburg; F. C. Gerlach, 14 cs. from Bremen; Defiance Sales Corp., 5 cs. from Rotterdam; Robert Wilson Paper Corp., 26 reels from Rotterdam; Vernon Bros. Co., 66 cs. from Glasgow; J. H. Berge, 3 cs. from Bristol; J. J. Shore & Co., 5 cs. from Hamburg; F. C. Strype, 8 cs. from Antwerp; E. Daiber, 2 cs. from Antwerp; S. Gilbert, 2 cs. from Bremen; J. Beckhardt & Co., 3 cs. from Bremen; C. L. Voorhees, 8 cs. from Yokohama and 10 cs. Liverpool; Corn Exchange Bank, 43 cs. from Kobe; Penson & Co., 6 bls. from Bremen; L. A. Consmiller, 6 cs. from Bremen; Heemsoth & Basse, 45 bls. from Rotterdam; Steiner Paper Corp., 32 cs. from Rotterdam; Hurley Johnson Co., 14 bls. from Liverpool; Van Oppen & Co., 26 cs. from Genoa; Manufacturers Trust Co., 13 cs. from Havre and 28 rolls Antwerp; P. H. Petry & Co., 8 cs. from Havre; Hensel, Bruckman & Lorbacher, 3 cs. from Hamburg; Bendix Paper Co., 6 cs. from Hamburg; Fuchs & Lang Co., 2 cs. from Hamburg; W. Bersch, 10 cs. from Hamburg; Phoenix Shipping Co., 3 cs. from Rotterdam; International Forwarding Co., 4 cs. from Hamburg; American Express Co., 6 rolls from Glasgow; National Freight Forwarding Co., 3 cs. from Hamburg and 4 reels Bremen; Titan Shipping Co., 3 cs. from Hamburg and 6 cs. Havre; Globe Shipping Co., 2 cs. from Southampton, 17 cs. Hamburg and 3 cs. Rotterdam; Atlantic Forwarding Co., 20 cs. from Hamburg.

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◆ Foreign Trade Opportunities

The following foreign trade opportunities are issued by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. Those interested are requested to communicate with the Bureau at its offices in Washington or New York or its branch offices in other cities, in every case mentioning the number of the inquiries referred to.

No. 54971 — Bankpost paper, watermarked, white and colored. Batavia, Java. Agency desired.

No. 54995 — Building and insulating board and tile. Hamburg, Germany. Agency desired.

No. 54972—Building felt. Calgary, Canada. Agency desired.

No. 54944—Insulating board. Toronto, Canada. Agency desired.

No. 54973 — Newspapers, overissued. Batavia, Java. Purchase desired.

No. 54974—Tissue paper for wrapping oranges. Sao Paulo, Brazil. Purchase desired.

No. 54975—Wallboard and insulation board. London, England. Agency desired.

No. 54939—Wallpaper. Vina del Mar, Chile. Purchase desired.

No. 54970—Paper milk bottle manufacturing machinery Osaka, Japan. Purchase desired.

No. 55062 — Newspapers, overissued. Madras, India. Agency desired.

No. 55063—Wallboard. Katowice, Poland. Agency desired.

No. 55079—Wallpaper. Brussels, Belgium. Agency desired.

No. 55061—Writing paper and envelopes. Buenos Aires, Argentina. Agency desired.

No. 55159—Paper bags and wrapping paper. Santo Domingo, Dominican Republic. Sole agency wanted.

No. 55153—Cellulose sheeting, transparent. Johannesburg, South Africa. Purchase desired.

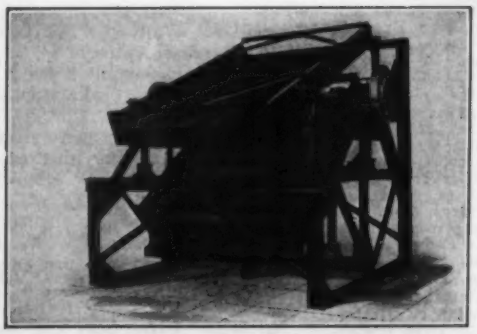
No. 55158—Paper cups, waxed. Cape Town, South Africa. Agency desired.

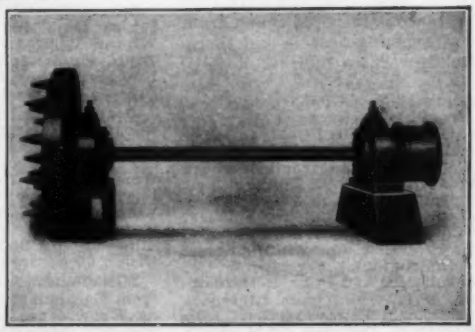
No. 55156 — Overissue newspapers. Tientsin, China. Purchase desired.

No. 55192—Newsprint paper, in rolls

HIGH SPEED WINDER
CAMACHINE 20
FOR NEWS BOOK AND KRAFT MILLS
WIDTHS 180" to 302"
New Feature for Reversing Web in Winding
Cameron Patented Method for Winding
Rolls Wire Side out when Required
CAMERON MACHINE COMPANY 61 Poplar St. BROOKLYN, N.Y.

RYTHER AND PRINGLE COMPANY CARTHAGE, N.Y.





A combination of the RYTHER CHIP SCREEN and THE WOOD IDEAL CHIP BREAKER, inserted under the Chipper Hood insures an ideal combination for large capacity and perfectly separated chips, thoroughly dusted and in perfect condition for delivering to the chip screens. Send for bulletins 528 and 126 for full description.

CANADIAN INGERSOLL-RAND CO., 10 Phillip's Square, Montreal, P. Q.

CURRENT QUOTATIONS

+ New Papers +

Writing—	
White rag	12–40
White sulphite	6–30
Colored rag	11–40
Colored sulphite	6–30
Ledger—	
White rag	12–40
White sulphite	8–30
Colored sulphite	8–30
Colored rag	11–40
Bond—	
White rag	12–40
White sulphite	6–30
Colored sulphite	6–30
Colored rag	11–40
Book—	
No. 1 S. & S. C	4.75– 7.50
Machine finished	4.50– 7.00
English finish	4.50– 7.00
Coated and enameled	6.50– 9.00
Lithograph, M. F	6.50–11.00
Newsprint—	
Rolls, contract, per ton, delivered New York	53.00–
Rolls, transient, per ton, delivered New York	53.00–
Sheets, per ton, delivered New York	58.00–
Sideruns, per ton, delivered New York	40.00–44.00
Cover stock—	
Coated, both sides	–10.25
Coated, one side	–10.15
Tissue—	
No. 1 white, 20x30	.65– .70
No. 2 white, 40x36	.55– .65
No. 1 manila, 24x36	.55– .65
Kraft	.65– .70
Wrapping—	
No. 1 kraft	4.25– 5.00
No. 2 kraft	3.00– 3.50
Southern kraft	2.75– 3.25
Boards—	New York and Chicago
News	22.00–26.00
Straw	32.00–35.00
Plain chip	22.00–26.00
White coated chip	35.00–40.00
Manila coated chip	30.00–35.00
Binders' Board	55.00–60.00

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and reams, and other paper. Santo Domingo, Dom. Rep. Sole agency desired.

No. 55110 — Roofing, tar-paper. Rosario, Argentina. Agency and purchase desired.

No. 55155—Tissue fruit wraps. Sao Paulo, Brazil. Agency desired.

No. 55168—Wallpaper. La Paz, Bolivia. Purchase and agency desired.

No. 55305—Insulating board. Calgary, Canada. Purchase and agency desired.

No. 55307—Insulating board. Edmonton, Canada. Purchase and agency desired.

No. 55323—Leather-cloth-manufacturing paper. The Hague, Netherlands. Purchase desired.

No. 55287 — Roofing board. Calgary, Canada. Agency desired.

No. 55418—Paper bags, and commercial and personal writing paper. Bridgetown, Barbados. Agency desired.

No. 55414—Printing, bond, ledger, typewriter and other paper. Bogota, Colombia. Agency desired.

No. 55356—Wallboard. Paris, France. Agency desired.

No. 55367 — Waxed paper, cardboard, or fibre milk and cream containers. Menston, England. Agency desired.

◆ Many Importers Drop Fight for Lower Duties

According to a report just made by the Import Committee of the American Paper Industry, the dockets of the United States Customs Court have recently been cleared of many long standing cases by the insistence of the Court that cases be tried or dropped. As a result, many cases involving paper have been abandoned by the importers, who were unwilling to go to trial. Among these cases were:

Thirty-two cases involving an advance of 10 per cent in the duty on boxed stationery. Sixteen, involving envelopes held subject to an additional duty of 10 per cent for special finish, were also abandoned. A long series of cases, involving 134 importations of envelopes for greeting cards, has been abandoned, as a result of a test case reported some time ago. In these cases the importers had claimed that the envelopes were duty free, as being packing for lithographed greeting cards, but the courts held that they were subject to duty at the rate for envelopes of 3 cents per pound and 10 per cent, plus an additional percentage in most cases for lining, decoration or other special treatment of the paper.

Twenty-one cases, involving fancy and decorated papers, were abandoned, the claimed duty rate being lower in each case than had been fixed by customs officials. Several importers abandoned their efforts to secure a printing paper duty rate of ¼ cent per pound and 10 per cent on red nature paper, a cover grade, on which duty was levied as cover at 30 per cent, by abandoning their protests. Three importations of metal coated or decorated paper classified for duty at rates higher than those which had been claimed by importers. The value of the paper in these cases was nearly $100,000.

◆ William F. Brunner

William F. Brunner, president of the Paterson Parchment Paper Company, with mills at Bristol and Modena, Pa., and a former member of the Executive Committee of the American Paper and Pulp Association, died at East Orange, N. J., December 17, in the seventy-first year of his age. He had for several years resided at the Hotel Suburban in East Orange.

Mr. Brunner is survived by his wife, two sisters and a brother. Services were held at Passaic, N. J., December 20.

◆ Perkins-Goodwin Co. Increases Capital

Perkins-Goodwin Co., 551 Fifth Avenue, New York, has just increased its capital stock by $500,000, all paid in cash. This brings the total capitalization of the company up to $1,700,000, consisting of $1,000,000 preferred and $700,000 common stock. This increase was made to provide additional funds to take care of its extending business which during the last ten years, in spite of lower prices for both paper and pulp, has increased over 300 per cent in dollar volume.

◆ Clarke Marion Promoted

Clarke Marion, for many years chemist at the plant of the Champion Coated Paper Company, Hamilton, Ohio, has been promoted to the position of production manager of all mills in charge of all manufacturing.

Mr. Marion has many friends throughout the industry who will be glad to hear of his advancement to new and greater responsibility. He is a member of the Technical Association of the Pulp and Paper Industry and an authority on the materials used in the manufacture of coated paper.

◆ "Miss Tanner" Resigns

The resignation is announced by the Import Committee of the American Paper Industry of Mrs. L. E. Miller, who, as Miss C. Lucile Tanner, came to the organization when it was founded in 1924. From an experiment in the industrial field she has seen the committee develop into an organization whose successful activities have challenged the admiration of American industry, and she was by no means an unimportant cog in the machinery by which the committee made itself an outstanding function of the paper industry.

◆ THE RETURN-VELOP, just introduced by the United States Envelope Company, is an interesting development in the envelope business. This is a patented reply envelope provided with a perforated extension of the lower back flap which may be folded back into the envelope or torn off and inserted. The envelope is then sealed in the usual way and after being thus closed is mailed first-class like any standard envelope. It is the most practical and best appearing reply envelope yet devised.

Specimens of the envelope may be obtained from the Advertising Department of the company, 21 Cypress Street, Springfield, Mass.

◆ FRANK E. DONOVAN, formerly manager of the United Paper Company of East Braintree, Mass., has joined the staff of the Robert Gair Company, it has just been announced. Mr. Donovan will devote himself to the promotion of special paperboard products, particularly those in which asphalt is used.

A GOOD HABIT

Use Lockport "TENAX" *Felts*

Only by strict discipline can a useful habit be fixed. If exceptions are allowed, the habit will not be formed.

Make it a Habit and no Exception to *Specify* **TENAX**.

Fix the habit—

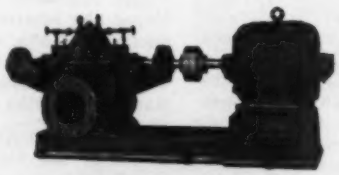
Non Users Are the Losers.

LOCKPORT FELT COMPANY

NEWFANE, N. Y.

LAWRENCE

"VORTEX" CENTRIFUGAL **PUMPS**



A heavier, more rugged pump clear through

From suction end to discharge you will find LAWRENCE "VORTEX" PUMPS built to stand up under the severe conditions of the paper industry. Compare it, part for part, with pumps you have used in the past. Unless you are already a LAWRENCE "VORTEX" user, you will be strongly impressed by the fact that each part is heavier, more rugged, and is designed and built equal to the job in your plant. A pump for every purpose, for pumping any liquid—pulp stock, white water, acids, etc.

Write for Bulletins.

LAWRENCE PUMP & ENGINE CO.

P. O. Box 70 LAWRENCE, MASS.

RADIAL BRICK

CHIMNEYS

Designed and Built

OLD CHIMNEYS

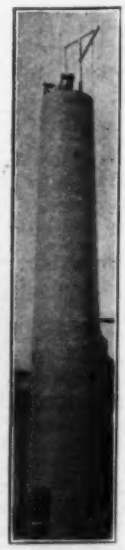
Inspected and repaired while in operation—

also guaranteed.

A Repair Job

Among our customers are some of the best known Railroads, Waterworks; and Coke, Steel, Machinery, Paper, Soap, Chemical and Glass Manufacturers.

Write for full information



New Erection

The NORTHWESTERN CHIMNEY CONSTRUCTION CO.

FIDELITY BLDG. Cleveland, O.

Lessons in Paper Making

By Harry Williamson

One of the greatest funds of information on paper making ever published for the mill man.

Part I contains the first twelve lessons and two separate articles--A Problem in Head Box Control and The Degree of Hydration.

Part II contains fourteen lessons and one separate article --Safety Practice in Machine Room. Price 50c each.

Practical Helps for the Mill Man

A 48-page pamphlet made up of practical helps, many of which have meant considerable savings in paper and pulp mills. Of tremendous value to the practical man. Price 50c.

The Paper Industry

333 N. Michigan Ave. Chicago, Ill.

NEW YORK CITY

◆ FRANK L. SCOTT, head of the Frank L. Scott Company, Inc., 270 Madison avenue, New York, and one of the most widely known paper men in the country, committed suicide in his office December 11. Mr. Scott was 51 years old. He had been prominent in the paper trade in the middle west before coming to New York some years ago and founding his own business, which he built up to be one of the largest mill representing concerns in the paper industry. He is survived by a widow, his son and his mother.

◆ THE MAJESTIC Mills Paper Co., Inc., fine paper merchants, for 18 years located at 462-464 Broome street, New York, has leased one of the D. S. Walton buildings at 138-142 Franklin street, corner of Varick street, and will have approximately 40,000 square feet of office and storage room, which is double the amount of space formerly occupied. It is announced that the company, in future, will be known as the Majestic Paper Corp.

◆ THE FOREIGN Paper Mills, Inc., of New York, which has been connected with the sole sale in this country of the Schopper standard paper testers, manufactured in Europe, is now known as Testing Machines, Inc., and is now occupying much larger quarters at 314 Broadway, New York, where the complete line of Schopper testers is on display.

◆ JAMES T. MIX, widely known in the industry as a newsprint salesman, is now associated with the Great Northern Paper Co. with headquarters in the New York office at 342 Madison Ave., according to announcement made by H. Merton Joyce, vice-president and manager of sales of the company.

◆ THE FROST-WHITE Paper Mills, of New York City, have been chartered under New York State laws with a capital of $25,000. The Albany Service Co. of 299 Broadway, New York, is representative of the new corporation.

◆ J. ARTHUR WOODS has joined the sales staff of W. L. Jones, Inc., paper and twine merchants of 96-98 Prince street, New York, and will cover a part of New York and out-of-town territory.

◆ THE UNITED Card and Paper Co. is the name of a new corporation chartered under New York State laws to conduct business in New York City. The company is capitalized at $20,000, and is represented by L. Greenberg, of 291 Broadway, New York.

◆ THE NATIONAL Vulcanized Fibre Co., with headquarters in Wilmington, Del., has increased its capitalization from $700,000 to $800,000 and its stock from 25,000 to 46,000 shares of no par value. The company's plants are at Newark, N. J., and Yorklyn, Del.

THE AWAKENING OPPORTUNITY

NEVER have there been such opportunities in industry as at present to gain a march on your competitor. While many are sitting tight, or lying apparently s a f e l y entrenched, they may be taken by surprise and find that their competitor, who has been alert with new ideas and improvements, has advanced beyond them and captured their strongholds in business.

• A depression generally advances the art or science in manufacturing and production by forcibly bringing out new ideas and improvements not so essential in good times and eliminating the inefficient.

• Do not wait for or expect the return to higher prices. Your success in the past is no guarantee of your future under the new conditions.

• Do not sacrifice quality to meet lower prices. It is not the present low prices; it is your high cost of production that should worry you.

• Higher qualities in product and lower production costs can be obtained by new processes and improved equipment, permitting less waste in material, increased production, more uniform product, better control of operations, lower labor costs, lower power costs, lower maintenance costs and higher all-round efficiencies.

• Let us show you how to obtain these lower production costs and a greater margin of profit.

Satisfactory Engineering Services Always Guaranteed

Mechanical—Electrical—Chemical
Steam—Combustion

FERGUSON ENGINEERS
Monadnock Bldg., Chicago, Ill.

A BIG JOB ABLY HANDLED

Photograph shows 30 roll Back Stand, with Duplex Cutter and Lay Boy. Cutter equipped with seven pairs of slitters, Lay Boy arranged to lay six piles. Each roll weighs 2000 pounds. Moore & White installation. Further information upon request.

THE MOORE & WHITE COMPANY

Paper Mill Machinery

FIFTEENTH ST. AND LEHIGH AVE. PHILADELPHIA, PA.

LOBDELL

IMPROVED MICROMETER ROLL CALIPER

An indispensable instrument to the mill equipped to do its own regrinding and equally useful in every mill in keeping an accurate check on the condition of the calender and press rolls.

LIGHT WEIGHT—EASILY ADJUSTED
EXTREMELY ACCURATE

Standard calipers made in sizes taking 7" to 30" diameters and 8" to 36" diameters in one instrument. Calipers for larger diameters made to order.

INVESTIGATE LOBDELL "PURALOY" CHILLED ROLLS
Developed for the exacting requirements of Water Finish, but equally superior for all uses.

LOBDELL CAR WHEEL COMPANY
Established 1836
WILMINGTON, DELAWARE